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AMERICAN ARTISAN and Hardware Record

VOL. 78. No. 6. 620 SOUTH MICHIGAN AVENUE, CHICAGO, AUGUST 9, 1919. $2.00 Per Year.

EVERLASTING

CAST IRON SMOKE PIPE

THE smoke pipe is always one weak spot in a warm air heater installation that gives your customers a good deal of worry. The reason is simple. The ordinary smoke pipe that is used lasts only for a season or two because it is not strong or heavy enough for the hard usage it receives. It burns out and usually at a time when the fire in the warm air heater can not very well be put out without causing inconvenience to the user.

You Mr. Dealer can overcome this fault by the easiest and most simple method. All that is needed is Stronger, Heavier **EVERLASTING CAST IRON SMOKE PIPE.** Under ordinary conditions **EVERLASTING CAST IRON SMOKE PIPE** will outwear the warm air heater. It is built in sections and in lengths to fill any distance.

EVERLASTING CAST IRON SMOKE PIPE is easy to install. Little time is needed and as it comes in sections no time is wasted in figuring out your job after you have once measured the distance of smoke travel.

EVERLASTING CAST IRON SMOKE PIPE is made in two-foot, one-foot and six-inch sections. Elbows are furnished in 45 degree and 90 degree angles, in eight-inch, nine-inch and ten-inch sizes.

Use **EVERLASTING CAST IRON SMOKE PIPE** on your warm air heater installations and keep your customers satisfied.

Our new catalog lists our Registers, Smoke Pipe, Fittings and a full and complete line of heating plant accessories. Write for it today.

WATERLOO REGISTER COMPANY

137 RATH STREET

WATERLOO, IOWA

Published Weekly. Entered as Second-Class Matter June 25 1885 at the Post Office at Chicago Illinois under Act of March 3rd 1879

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS. 46 and 47.

MAHONING HEATERS

Sell Themselves

So many superior qualities are involved in **MAHONING** construction that to tell of one would slight others equally as important.

No need to ***talk*** Mahoning qualities. ***Show*** your customer,—he will see it at a glance.

We want good live dealers everywhere, and offer a tempting proposition.

A style and size for every purpose.

MAHONING TYPE "C"

Illustration shows quite clearly the combustion as it takes place in the Mahoning system. Note how the admission of air through the slots in the firepot causes combustion to take place all around the outside of the fire. The hottest part of the flame is in direct contact with the outside surface of the heater where the radiation of heat takes place. Only one of the features that have made the Mahoning famous from coast to coast.

The MAHONING FOUNDRY CO.

YOUNGSTOWN, OHIO

A Mammoth Plant With a Mammoth Production

FRONT RANK

TRADE NAME REGISTERED

Real "FITTING FITTINGS"

Build Now

Production depends on Construction

U. S. Dept. of Labor
W. B. WILSON
Secretary

Write for Catalog

MANUFACTURED BY

HAYNES-LANGENBERG MFG. CO.

4058 FOREST PARK BOULEVARD

ST. LOUIS, U. S. A.

ESTABLISHED 1880
Representative of
The Hardware, Stove, Sheet Metal, and Warm Air Heating and Ventilating Interests
PUBLISHED EVERY SATURDAY

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Favorable Condition of Affairs.

RETAILERS, JOBBERS, AND manufacturers will find encouragement for greater production and distribution in the reports of the business conditions which characterized the month of July. Last month set a mark that is unmatched by the record of any other month for more than a quarter of a century, or since monthly statistics were first compiled. Business failures during July were only 452 for the entire United States with liabilities of $5,507,010—the smallest in two decades. That practically nine months after the signing of the armistice, with tremendous economic readjustments going on as the result of changes in international affairs, commercial failures should fall to a total never before recorded is an economic phenomenon which few people had foreseen. This is especially noteworthy in view of the continuous increase in the number of new enterprises.

A State of Mind.

AT THE RISK of incurring the charge of economic heresy, it may be said that the law of supply and demand is not the chief factor in the present industrial situation. The paramount influence is one of psychology. Repeatedly, it has been pointed out in these columns that the state of mind of the people is more responsible for the fluctuations of commerce than any other cause known to students of affairs. It is with a sense of gratification, therefore, that we find corroboration of this view in so reliable an authority as the American Metal Market. Commenting editorially on prices and inflation, it remarks that few observers are disposed to question the propriety of the advances in commodity prices that are so conspicuous. To them the situation appears unsound in that an inflated situation is being still more inflated instead of being deflated. It does not follow that when conservative men sound a note of warning they will be proved by events to have been right. One may recall, for instance, the "stop, look and listen" statement issued by Judge Gary in January, 1916.

At that time steel prices were just on a par with the prices of 1907; in other words they were as high as they had been at any time for more than a dozen years. They were then 15 per cent above the ten-year prewar average. The Government level was 11 per cent above and the present level is 81 per cent above, with prospects of advances rather than declines. A decline to 15 per cent above the prewar level, or to the level at the time of Judge Gary's warning of January, 1916, would now be regarded as absolutely ruinous. The point in referring to the present steel prices is that high as steel prices are they are very low by comparison with nearly all other commodities, which are at double or triple their prewar averages. By no means is any criticism of present steel prices intended.

How can the devastation produced by the war be made up by having high prices all around? No economic law is producing this situation as a remedy for what occurred during the war. The present situation does not represent progress towards a reconstitution of the world. It represents effects of the war. One might assume, the war having ended, that the world is taking steps towards what is to be the normal for the next generation or two, but that is not the case. The influence of the war remains. The currencies of nearly all governments have been greatly expanded and national debts have greatly increased. While the actual physical wealth of the world has decreased, the symbols of value have greatly increased. There are more bonds, public and private, there is more currency, and inventory valuations and real estate appraisals are up.

It is quite certain that, whatever the theory, the present trends will continue, more or less, for several years. Practically all observers are agreed that whether or not the present situation and philosophy are what would be best for mankind in the long run they are going to prevail. The philosophy is universal. The large corporations want to make larger profits per unit of output, and the common workman wants a great deal higher wage rate for a given amount of physical exertion. The whole thing appears to be entirely psychological. It is what is in men's minds, no matter what their position.

Initiative Solves the Difficulty.

ENDURING AN EVIL is a poor way to remedy it. There is no obstacle so impregnable that some weak spot can not be found in it at which to begin the work of its destruction. Instead of bewailing adverse conditions, it is better and more profitable to fight them. Following the line of least resistance may be good policy in some things, but it is not always a wise procedure in merchandising. In salesmanship, as in football, it is often necessary to buck the line forcefully and with all the courage at one's command. The *laissez faire* plan of not interfering in what seems to be inevitable, ends in laziness and stagnation. In every normal set of brains there is plenty of grey matter with which to think out a solution for difficulties.

Initiative and persistence will often change a cause of loss into a source of gain. An example to this effect, worthy of wide emulation, is furnished in the Exchange Sheet of the Ohio Retail Hardware Association.

In Putnam County, Ohio, there is a Farm Bureau through which the farmers are buying binder twine at a price below that which the dealer has to pay. H. C. Hummon, a hardware retailer at Leipsic, Ohio, had 40,000 pounds of twine in his store, which cost him 21½ cents a pound plus freight, drayage, and war tax. He was confronted with the prospect of a loss on this stock because of his inability to sell it at the same price at which farmers were buying twine through the Farm Bureau. He did not whine about the disagreeable situation. Instead he secured a ball of last year's Grange twine, weighed it in comparison with a ball of his own twine and found that the latter was three-fourths of a pound heavier than the Grange twine. Measuring the two balls of twine he discovered that his twine was 336 feet longer. It takes 26 inches of twine to tie a bundle of wheat. He proved to his customers that twine bought from him would tie 155 bundles more than the twine bought through the Farm Bureau. He showed that his regular price to the trade represents the Grange twine as worth only twenty and seven-tenths cents per pound. As a result of his agitation in this matter he received a letter from the Agricultural Extension Service of the Ohio State University, Columbus, Ohio, assuring him that the authorities at the University, who are in control of the County Agents, have instructed them explicitly to confine themselves to educational efforts and carefully to avoid any activity that smacks of commercialism. In other words, it is held that the organization of farmers for the purpose of buying and selling is not the function of the County Agent, and is work that he should not do.

More Output Is Remedy.

LEAVING ASIDE ANY question of moral issues, which may be involved in the matter, it can easily be demonstrated that deliberate curtailment of production is detrimental to the general welfare. Much of the social unrest of our day can justly be ascribed to the misleading doctrine that "the less work a man does the more work he provides for others to do." Carried to its logical conclusion, this would mean the ultimate paralysis of industry. Locomotives, for instance, pull long freight trains many miles in the course of the day. By doing away with railroads and going back to the ox-cart, more work would be provided—more still by carrying the world's merchandise on our backs after the fashion of the coolies of China. In fact there would be so much work to do that life would become an unbearable drudgery. The benefits of progress would be wiped out and serfdom would take the place of freedom.

On the other hand, by increasing individual production, more commodities would be made available for general consumption; and, hence, more wealth and comfort would be placed in circulation. For wealth is not money but the things for which money serves as a convenient medium of exchange. The high cost of living which is causing so much concern to people everywhere is merely a matter of under-production. This is so clearly perceived by the National Association of Manufacturers that this influential body has deemed it wise to formulate it in resolutions to be published broadcast for the enlightenment of the public. The substance of the Association's pronouncement upon the matter is as follows:

"Whereas, it is to the true welfare and interest of the people of the United States that our national industrial production be continuously increased so that our war debt taxation may be eliminated in as short a time as possible, more normal price conditions prevail and our industrial development and prosperity be stimulated; now, therefore, be it

"Resolved, First, that we deny the truth and deprecate the tendency of the teaching that the manufacturers of the United States are the principal or deliberate authors of the present era of higher price levels.

"Second, that we urge and call upon the people of the United States and our factory workers in particular, to refuse and discourage the unAmerican and dangerously unsound 'make-work' doctrine, which if pursued to any extent, will result in complete industrial demoralization.

"Third, that we urge and call upon the people of the United States, and our factory workers in particular, to do everything in their power to encourage, stimulate and increase our industrial production, as the direct means toward restoring more normal price conditions.

"Fourth, that we urge and call upon every duly constituted Federal, State and local agency of Government in the United States to lend its aid to an effort to foster and increase our industrial production, promotion of harmony and discouragement of agencies and causes of discord and bad feelings between the employers and employes, and relieve from every possible handicap the legitimate manufacturing interests of the country.

"Fifth, that we urge upon the public press, the churches, educational institutions and every other factor in molding public opinion to give all possible assistance in directing public attention to the urgent need for increasing industrial production."

Piddling Publicity.

IT WOULD BE AN easy matter to compile a list of sheet metal contractors and hardware dealers who have developed profitable business through advertising. It would be just as easy—perhaps a trifle easier—to make up a list of others in the same trades who advance very slowly because they do not pay enough attention to the wording of their advertisements. More or less vaguely they are aware of the need of publicity. They feel that they ought to present their business to the people in their local newspapers. But instead of writing out an advertisement in the same phrasing which they use in talking to their customers, they insert a copy of their business cards or compose a cold, stiff, formal statement which has no more appeal to the reader than the chalk notations of a switchman on a freight car. Advertising pays big dividends to the business man who talks to the reader

as he would if the reader were standing before him in his store ready to buy a washing machine or an equipment of garage hardware.

RANDOM NOTES AND SKETCHES.

By Sidney Arnold.

One of the advantages of steady application to one's work is that it keeps one healthy. Most of the cases of nervous breakdown about which we read are not the outcome of too much attention to business, but of worry about business. If we keep wide awake during the day and attend to our tasks with minds serene, we will have no trouble in sleeping through the night.

* * *

Business is good, says Tom Usher of Russell and Erwin Manufacturing Company, Chicago, Illinois. Orders are coming into every industry at a satisfactory rate—even into industries which produce big things whose manufacture is necessarily slow. In the latter connection he relates the case of two travelers who met in the smoking room of a hotel and at once commenced talking shop.

"How's business? Getting many orders?" asked the stout man. "More than I can handle," said the short man. "How is it with you? Had any orders lately?"

"Well, business is pretty good," said the stout man. "I haven't had an order for a year and a half, but expect to get one next spring."

At this point the curiosity of a bystander got the better of him. Calling the short man aside: "Who's your stout friend?" "A traveler," was the brief reply.

"Well, he certainly has puzzled me. 'What's his line?"

"Suspension bridge."

* * *

Advertising should be explicit, says my friend W. A. Lockwood of the Ringen Stove Company, St. Louis, Missouri. He tells of a prominent society woman who recently advertised for a cook and waitress, "Polish or Scandinavian sisters preferred."

Soon after the time for the arrival of the applicants a well-dressed young colored girl appeared.

"I came in answer to the advertisement, ma'am," she said. "I'd like to do chamberwork or waiting."

"I advertised for Polish or Scandinavians," replied the mistress.

"Yes, I know, ma'am," said the colored girl, "but you didn't say whether white or black, ma'am."

* * *

Looking through an old scrapbook, I found this paragraph of Henry Ward Beecher describing the smile:

Nothing on earth can smile but man. Gems may flash reflected light, but what is a diamond flash compared to an eye-flash and a mirth-flash? Flowers can not smile; this is a charm that even they can not claim. It is the prerogative of man; it is the color which love wears, and cheerfulness and joy—these three. It is a light in the windows of the face, by which the heart signifies that it is at home and waiting. A face that can not smile is like a bud that can not blossom and dries upon the stalk. Laughter is day, and sobriety is night, and a smile is the twilight that hovers gently between both—more bewitching than either.

* * *

The talk veered to the subject of absentmindedness and my friend Charles Peffley of George M. Clark and Company, Chicago, Illinois, told of a witness who was asked in court to give his opinion as to whether the defendant was absent-minded or not.

"Well," he replied cautiously, "I remember one time he thought he'd left his watch at home, an' took it out o' his pocket to see if he had time to go home to get it—I should say that he was a little absent-minded."

* * *

That appearances are deceitful has been exemplified times without number. One of the most amusing examples of the fact was related to me by my friend Josiah Borden of the Borden Stove Company, Philadelphia, Pennsylvania, in this veracious incident:

"I've lost my hearing!" suddenly exclaimed Fred Brown's aunt Jane who was visiting him from the country.

"Lost your hearing?" queried Brown.

"Yes," she affirmed. "See that man out there playing the hand organ? Well, I can't hear a single note he's playing."

"Why, that's a moving picture photographer at work," said Brown in tones of relief.

* * *

My friend Bill Hawkins of the Columbian Rope Company, New York City, says that everyone who rides on a certain owl car in his district knows "Old Si," the conductor, and "Old Si" knows everybody on the line and never fails to put his passengers off at the right corner. He is blunt in speech, but witty.

Last Sunday night several couples of young people boarded the car and began laughing and talking in loud tones, trying to "kid" every one on the car. Finally one of the youths spied "Old Si," whose shirt front was somewhat the worse for the day's wear.

"Say, Mr. Conductor, why didn't you put on a clean shirt tonight for Sunday?" And his companions guffawed.

"Si" never hesitated a second, but came back with this:

"Because you were not at home and your mother had no one to send my washing by."

The crowd bellowed, and the young folks got off at the next crossing.

* * *

There are some forms of wealth which we can freely spend without diminishing their sum total. Indeed, by a strange paradox, we grow richer in their possession the more lavishly we disburse them. Kindness, pleasant words of praise, cheerfulness, encouragement to the despondent, and friendliness are riches which grow by being expended.

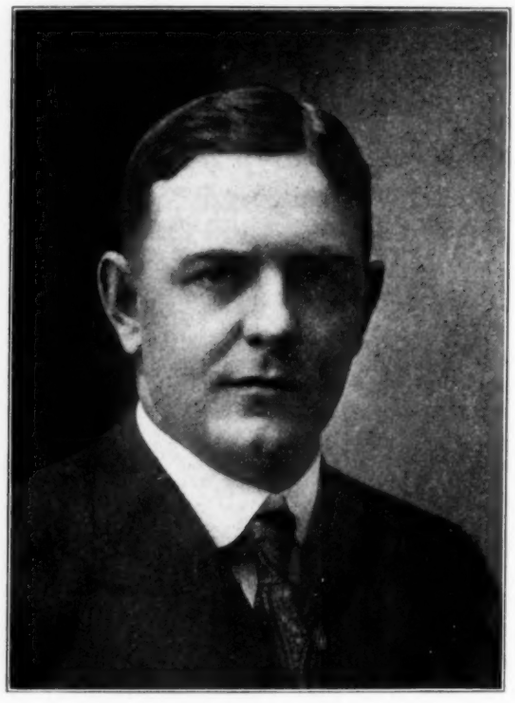
Give the Best that You Have.

Spread love, and love will flow back to you
A strength in your utmost need;
Show faith, and others will show
Their faith in your word and deed;
For life is the mirror of king and slave—
It is just what you are and do,
So give to the world the best that you have
And the best will flow back to you.

AMERICAN ARTISAN

FRANK E. EDERLE.

Whether salesmen are born with the instinct of their craft fully developed or whether they acquire the talent by the sweat of their brow or not, is a matter of academic rather than practical interest. The fact is, however, that some men develop a proficiency in the gentle art of persuading merchants to purchase commodities, and enjoy the transaction. To certain men, it is always labor. To others, it is pleasurable work. Conspicuous among the latter is Frank E. Ederle. He enjoyed selling hardware over the counter of his father's store in Bedford, Michigan, long before he reached the voting age. He was born in that town, March 3, 1879, and attended the grammar schools there. He finished his studies in the Battle Creek High School, from which institution he was graduated in 1897. Upon his return to his native town he went to work for his father. He sold hardware and with every article he dispensed service and geniality which added value to the simplest articles in his father's store. At the age of twenty-one years, he fell in love with a very dashing young lady by the name of Miss Mae Born. Followed a brief but intensely romantic courtship. They were married July 14, 1900. Two sons, both of whom are living, have rendered theirs a happy union. In the opinion of his father, the new dignity of a married man required promotion. Accordingly, he was made a junior partner in his father's establishment. This position he held until his father retired and the business was sold in 1905.



Frank E. Ederle found it an agreeable and easy thing to sell hardware to the people who came into his father's store. He concluded that there would be nothing essentially different in selling other commodities as a traveling salesman. He, therefore, cast about him for a suitable connection and obtained employment with a farm implement concern in Toledo, Ohio. After a year on the road, he decided that his future did not trend in the direction of agricultural implements. He secured a position with the W. J. Burton Company of Detroit, Michigan, makers of sheet metal products, and he has been with the firm ever since. From the first he perceived the urgent need of organization to protect and promote the interests of sheet metal contractors. He never lost an opportunity to impress that necessity upon the men of the trade with whom he came in contact. Indeed, it became a dominating conviction, which colored all his conversation when sheet metal men engaged him in talk upon their personal affairs.

Probably no man in the state of Michigan has a more copious fund of argument in support of the advantages of trade organization than Frank E. Ederle. From actual experience, he knows the weakness of individualism as applied to the interests of a trade. At the same time, he yields to no one in his advocacy of personal initiative and self-reliance. But he knows that these sturdy virtues are not a sufficient substitute for coordinated endeavor in the development of industry. He realizes that the right kind of an association intensifies these virtues and distributes their value throughout the trade without lessening their effect in each individual business. It is one thing, however, to possess clear ideas as to the importance of organization and quite another thing to be endowed with organizing ability.

The ability to bring men together in a society for the carrying out of objects of common interest to its members implies the faculty of winning confidence and blotting out the petty business jealousies whose sum total constitutes a formidable obstacle to cooperation. Without belittling the part played by other men, it may be said that the Michigan Sheet Metal Contractors' Association owes much of its origin and successful growth to the enthusiasm and untiring labors of Frank E. Ederle. It was organized in the Fall of 1910 and Frank E. Ederle became its Secretary two years later. At every annual convention since 1912 he has been reelected to the same office. He likes baseball and all manly sports, but he himself says he has no particular hobby except to feel that he is on the square with all his fellow men. If he has any prejudices, they are on the side of his organization, for he believes that the Michigan Sheet Metal Contractors' Association embraces in its ranks the most progressive men of the trade in that state, if not in the entire country.

HALL OF FAME

NEWBOLD LEROY PIERSON, JR.

A determination to know all that is necessary to know about any undertaking in which he may be interested is a salient characteristic of Newbold LeRoy Pierson, Jr. He is not satisfied with vague generalities nor guesswork. He does not rest until he has accurate information concerning any matter upon which he may be engaged. This aspect of his nature is not of recent manifestation. It has been noticeable in him from childhood. He showed signs of it during his studies in the public school at Cincinnati, Ohio, in which city he was born March 24, 1889. This liking for thoroughness was largely responsible in shaping his career in later years. It was because of this characteristic that he passed into the Cincinnati Technical High School in preference to following the courses in the ordinary high school where literary and scientific subjects rather than technical constitute the curriculum. Upon his graduation, he entered the real estate and building business with his father. The experience which he derived from this connection did not consist merely of buying and selling, collecting rents, and looking after affairs. It embraced the acquisition of data concerning architecture, relative values of different structural materials, and numerous other details which his technical education rendered interesting to him.

A year spent in the automobile supplies business added to the diversity of his knowledge. This is a field of immense proportions constantly undergoing changes as a result of inventions and improvements. It is still in a more or less undeveloped condition with reference to specializations. Newbold LeRoy Pierson, Jr., did not remain longer than twelve months in this business for the reason that it did not appeal to him as offering the attractions which suited his talent and training. Therefore, in 1913 we find him entering the employment of the American Rolling Mill Company, Middletown, Ohio. He went into the plant and worked in the various departments for one year in order to get a clean-cut perspective of the business in its entirety. He wanted to know how things are made and managed. From the outset he realized that it was not essential for him to learn the minutest particulars of the processes of production. He had no intention of becoming a mechanic. His purpose in working in the various departments was to familiarize himself with the product and its modes of manufacture so that he might intelligently represent it to the trade.

Newbold LeRoy Pierson, Jr., has a certain deep-rooted honesty which would make it impossible for him to take part in the selling or distribution of a commodity or group of products which he did not understand. For want of a better adjective, this might be described as intellectual honesty. It is the sort of honesty which is far above the common virtue that goes by that name. The intellectually honest man strives always to keep his mind free from the influence of preconceived notions. His judgment is not swayed by emotional prejudices. He acquires the judicial temperament without sacrificing any of the warmth and friendliness which are essential to good fellowship.

Other business men like to deal with him because of his accuracy and fairness. Indeed it may be affirmed that fairness implies accuracy. When Newbold LeRoy Pierson went to the Detroit, Michigan, office of the American Rolling Mill Company in 1914, he carried with him the results of a varied experience which fitted him for the new duties which he assumed. In the Detroit office, he continued the habit of studying every phase of the business. As a consequence, he soon acquired a reputation for reliability. His associates learned that his statements could be depended upon and that whatever information he gave out was based upon concise knowledge with no element of conjecture. His advancement to the post of assistant district manager of the Detroit office in 1917 came as the logical outcome of his devotion to his work.

He keeps himself healthy and to a large measure happy by working between times in his garden of eight acres. He is reasonably interested in other recreations and enjoys baseball. He played the position of catcher at the ball game in Bay City, Michigan, at the recent annual outing of the Michigan Sheet Metal Contractors' Association, and won applause for his skill and good nature.

UP TO THE MINUTE NEWS SIFTINGS

The Sunray Stove Company, Delaware, Ohio, is planning two plant additions, 80x100 feet and 43x85 feet, two stories.

AMERICAN CONSULATES APPRECIATE TRADE VALUE OF CATALOGUES.

Since the return of peace and the removal of Government trade restrictions, the use of American consulates in connection with trade publications and catalogues should become of special value in connection with reconstruction work in foreign countries, according to United States Consul Henry D. Baker, who writes to *Commerce Reports* from Trinidad, British West Indies. At the American consulate in Trinidad special facilities are given for the inspection of all trade publications, and local business people are invited to make the freest possible use of them.

"As an example of how such publications in a consulate, when readily accessible to the business public and conveniently displayed, are of practical assistance to American trade, I quote the following letter received from one of the leading merchants here, who is interested chiefly in motor cars:

"'I think it only fair that I acknowledge in this formal manner the great service which the catalogues on file at your consulate have been to me when ordering goods of various descriptions from the United States. I am sure that this service will be as greatly appreciated by the general public when they learn that it is at their disposal.

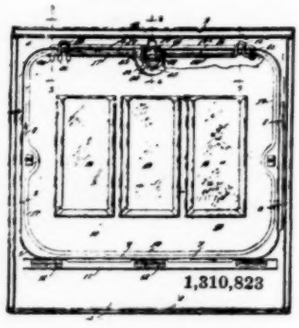
"'I may mention that by last mail I forwarded orders totaling $8,000 or $10,000 resulting from information received from catalogues and trade journals of this consulate.'

"Many local merchants when they find it desirable to take on new lines of trade, introduce novelties, or open up American connections for goods, now come to the American consulate to inspect the trade papers, catalogues and directories of trade. Frequenty, a merchant in looking for information concerning a particular article finds himself interested in other lines of goods also. One man here who is furnishing his residence has placed orders for house furnishing goods of all kinds with American firms whose catalogues he has seen displayed at this office, while in quest of trade information relative to his business. All seem very very much impressed with the attractive character of American trade catalogues.

"In every mail a great number of trade letters and catalogues come to this office from the United States. They are referred to any merchants who may be asking for information along the line mentioned in the letters. After every mail a list is made up of letters received from American firms seeking trade, and local newspapers publish these lists for the interest and information of local firms."

OBTAINS PATENT FOR A FASTENING MEANS FOR OVEN DOORS.

Lee S. Chadwick, East Cleveland, Ohio, and Carl C. Rehmer, Cleveland, Ohio, assignors to The Cleveland Metal Products Company, Cleveland, Ohio, have procured United States patent rights, under number 1,310,823, for a fastening means for oven doors and the like, described herewith:



The combination with a pair of elements, one constituting a frame and the other a closure, of fastening means for the closure comprising a rock shaft which consists of a rod having an offset portion, said shaft being supported by one element and having a finger for engagement with the other, and a keeper pivotally supported by the closure and having a latch arm that is adapted to engage the frame and an actuating arm that is adapted to cooperate with and override the offset portion of the shaft when the keeper is turned to effective position thereby to oscillate the shaft to project its finger against the frame and retain the same in such position.

IS A NEEDFUL DEVICE FOR STOVE DEALERS AND INSTALLERS.

The Sullivan-Geiger Company of 501-509 Madison Avenue, Indianapolis, Indiana, make oval stove pipe reducers, one of which is shown in the accompanying illustration. They are made of uniform color and polished steel. These reducers are made with a seven-inch oval bottom—which fits perfectly over the oval collar of the stove or range—and are tapered upward to six inches round top. Thus they reduce from seven inches to six inches. There are many stove dealers and installers who greatly prefer these oval stove pipe reducers to the seven to six inch stove pipe. The Sullivan-Geiger Company will be pleased to forward further particulars and their literature to those requesting it, and they should be addressed at 501-509 Madison Avenue, Indianapolis, Indiana.

Oval Stove Pipe Reducer, Made by the Sullivan-Geiger Company, Indianapolis, Indiana.

People like the gossip, but all despise the gossiper.

THE WEEK'S HARDWARE RECORD

Of Interest to Manufacturer, Jobber and Retailer

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing western hardware and metal prices corrected weekly. You will find these on pages 40 to 45 inclusive.

The Corbin Cabinet Lock Division, New Britain, Connecticut, is planning to build a large addition.

The Randolph Hardware Company, Randolph, Wisconsin, is contemplating a warehouse, one story, 32x60 feet.

The Neptune Hardware Manufacturing Company, East Norwalk, Connecticut, has awarded a contract for the erection of a two-story addition, 60x80 feet.

The Wald Manufacturing Company, Sheboygan, Wisconsin, manufacturers of hardware specialties, will remodel their plant and build an addition costing about $15,000.

The George H. Ruby Hardware Company, Oneida, New York, has been incorporated for $35,000 by R. B., T. K. and George H. Ruby to manufacture hardware products.

The Peterson Hardware Company, La Porte, Indiana, has been incorporated for $25,000. The incorporators are Charles F. Peterson, John F. Peterson and Julius C. Travis.

The Apex Appliance Company, Chicago, Illinois, manufacturers of washing machines and other mechanical devices, will build a five-story plant, 100x200 feet, to cost about $275,000.

The Interlock Hardware Company, New Haven, Connecticut, has been incorporated for $150,000. Henry G. Voight, Edward W. Sibley and Louis B. Zacher are the incorporators.

The Schoener Garden Tool Company has been incorporated at Des Moines, Iowa, for $350,000. H. Schoener is president, C. D. Bowles, vice-president, and John C. Little, secretary and treasurer.

The Gordon Products Company, Union Hill, New Jersey, has been incorporated with a capital stock of $100,000 by Edward Hollander and William Gordon. They will manufacture hardware and metal specialties.

The Thompson Marsh Company, Akron, Ohio, has been incorporated to deal in hardware with a capital of $10,000. The incorporators are Wilbert Thompson, Raymond G. Marsh, Mary Thompson, Edith C. Marsh and Ernest J. Kempel.

The Stevenson Manufacturing Company, Barton, Wisconsin, has been incorporated for $100,000 to engage in the manufacture of hardware specialties, etc. The incorporators are Charles M. Stevenson, J. J. Fellenz and J. B. Matenauer.

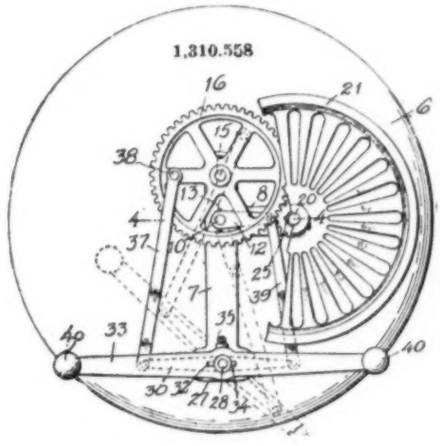
Most men's prospects are better than their examples.

HAS COMPLETE STOCK OF HIGH GRADE BUILDERS' HARDWARE.

Building is booming in all districts. For the last couple of years building was practically at a standstill, but now it is noticeable that a vast change is taking place. Dealers should watch building operations in their neighborhoods and get after the carpenter boss, contractors, and home buyers for contracts on builders' hardware. This is an excellent way to obtain good customers and many sales can be made. There is a great amount of articles which can be sold to the home owner and all new residents can be made permanent customers. Bullard and Gormley Company of Chicago, Illinois, can fill all orders on builders' hardware and general hardware. They carry a complete line of garden tools, mechanics' tools, cutlery, guns, ammunition, sporting goods and fishing tackle in addition. Dealers should look over their stocks now and write to the Bullard and Gormley Company, 175 North State Street or 7-9 East Lake Street, Chicago, Illinois, for further information.

IS GRANTED PATENT FOR A WASHING MACHINE MECHANISM.

Alfred Bohy, Albia, Iowa, has procured United States patent rights, under number 1,310,558, for a washing machine mechanism, described in the following:



In combination with a receptacle having a removable top and a shaft rotatably mounted in said top, operating gearing for said shaft including a rotatably mounted power transmitting member, an arm fixed to the shaft, a gear element having its axis spaced from said shaft, operating connections for the gear element and said arm connected to said power transmitting member at points equi-distant from its axis and on relatively opposite sides thereof, and a fly wheel geared to said gear element.

PRINCIPLES AND EXAMPLES OF GOOD WINDOW DISPLAYS.

CONSPICUOUS WINDOW DISPLAY OF ROPE AND CORDAGE HAS STRONG ADVERTISING VALUE.

Remarkable from many points of view is the window exhibit of rope and cordage arranged by H. C. Crabb for the Belcher and Loomis Hardware Company, 83-91 Weybosset Street, Providence, Rhode Island. The background of white paneling affords strong contrast for the goods displayed and gives sufficient tone to the lengths of fiber used to demonstrate the raw material from which the rope and cordage are manufactured. It is always a convincing aid to the persuasiveness of a window display to introduce the raw materials from which the finished product is manufactured. In the window display under discussion an idea of strength is clearly conveyed by the long fibers of manila hemp in the background. The average customer knows that rope and cordage woven from long fiber hemp or sisal is much more dependable than that woven from short strands. The use of this long-fibered raw material in conjunction with the manufacturer's posters serves to deepen the significance of the line, "The rope you can trust." The impression of strength and dependability is further intensified by the anchor in the foreground. The huge coils of rope in the center of the display suggest power, and transmit part of that suggestion to the smaller ropes and balls of twine on either side.

The designer of this window display is to be congratulated upon adding just enough of the manufacturer's advertising to carry to the observer the idea of a trademarked product. The chief effect of the display upon the passer-by, namely, that of strong, reliable rope and cordage, is not interfered with by any distractions. That is to say, related articles of hardware are not introduced in the display—although there is a strong temptation to do so. Many window dressers succumb without much resistance to the temptation of getting as many articles as possible into a display. They forget that a window exhibit is an advertisement. It must be studied as to its mechanical arrangement with the same care as an announcement of goods in a newspaper. The value of printed publicity is weakened whenever the advertiser tries to crowd too many words and illustrations or describe too great a variety of articles in a limited space. The most effective window display is that which features one article or a closely related group of articles. It avoids multiplicity of detail and thus lessens the chances for wearying the passer-by. This window display of rope and cordage embodies the necessary principles of sound salesmanship. It shows the goods clearly; states the name of the manufacturer; gives the assurance of dependability; and places within easy range of vision samples of the long fiber Manila hemp from which the goods are made. The excellence of this display was proved upon Company's records of sales during the period in which the rope and cordage were on exhibit.

Window Display of Cordage and Rope, Arranged by H. C. Crabb for the Belcher and Loomis Hardware Company, 83 to 91 Weybosset Street, Providence, Rhode Island.

When you sell goods you feel certain will not prove satisfactory see that the customer understands perfectly the quality he is getting.

ANALYZES THE RELATIONS OF THE RETAILER TO GENERAL INDUSTRY.

Speaking before the Royal Commission on Industrial Relations, appointed by the Canadian government to inquire into industrial conditions, E. M. Trowern, Secretary of the Dominion Board of the Retail Merchants' Association of Canada, clearly demonstrated the necessity and importance of the retail distributer and his essential connection with industry in general. His address is herewith reproduced:

Although the question of the increased cost of merchandise and the cost of distribution at retail may not be considered by your committee to properly come under the public enquiry that has been allotted to you to report upon, yet we feel that it is so closely related to the subject you have under consideration that we are taking the liberty of presenting to you a few facts on the subject of retail distribution as we see them, standing, as we do, between the producer, the manufacturer and the workman on the one hand, and the consumer on the other. So much has been said about the conditions of the producer and the manufacturer, and what is termed, for the sake of a better classification, the "working classes," and so little has been said about what is known as the distributing classes, that the whole subject has become confused and misunderstood.

Millions Invested.

It is not generally known that there are many more millions of dollars invested in distribution than there are in either manufacture or production. It could not but be otherwise; merchandise must always be manufactured ahead of the immediate demand. Goods produced or manufactured in Vancouver are of no value to people residing in Halifax unless they are transported to the latter point. To do this, it requires negotiation, purchase, transportation, warehouse facilities, retail facilities, etc., and final delivery to the ultimate purchaser in single items. A host of transactions take place before the goods are finally delivered. All these separate transactions cost money, and take time and intelligence, in addition to "capital," which cannot be regarded in any other light than "accumulated industry."

Present System Natural Development.

We are quite aware that arguments have been put forth for centuries striving to discover some plan whereby goods produced or manufactured can be handed direct to the consumer, and to have the middleman—which means either the wholesaler or the retailer—removed. All efforts in this direction have been failures, and they always will be failures, because the present system has been a natural development that has grown out of actual necessity.

Prunes or raisins grown in South America or in Egypt are of no value to consumers in Ottawa unless they are brought directly to their tables here. No consumer would think of ordering such things direct, or having them shipped in small quantities; they must come in bulk. When they arrive they must be cared for, protected against weather and other conditions, sold to the retail trade, and distributed by them to their customers.

Property Value High.

The value of the land and buildings upon which retail stores are situated, together with the value of the wholesale properties, exceeds in value and is more highly assessed than any other property in any municipality. Add the value of all the retail property in Canada together, couple with it the value of the stocks which are held waiting, ready and near at hand for the convenience of those who want the goods, and then add the value of all the wholesale property and merchandise to the retail property, and you have a volume of wealth that far exceeds the value of all our farming and manufacturing industries. This costly and expensive system exists because it is required and because there is no other legitimate system that can take the place of it. It has been found to be the most economic, convenient and elastic system that can be provided, and it has developed through necessity and experience. There is no practical proposal or scheme in sight that can take the place of our present system of distribution. It requires adjusting here and trimming there, but the underlying principles cannot be abolished. We are anxious to go on and develop it and make it more complete and convenient. This can only be attempted by those who practically understand the principles which guide and direct it. No improvement can come from any other source.

The Cooperative Society.

All attempts that have been made by those who operate "Cooperative Societies" in any part of the world have proved to be nothing more than the old scheme of one merchant endeavoring to outwit his competitor by trying to tell the public that his goods and his system are far superior to those of his neighbor, whereas the so-called Cooperative Society system is clumsy in its operations, inferior in its service, and its methods of handing back so-called dividends or bribes to its customers have all the deceptive elements of the trading stamp scheme.

To those who are not acquainted with the problem of retail merchandising, and from the manner in which some of these cooperative societies advertise themselves, and their supposed superior methods, it is not surprising that those who are unfamiliar with the "tricks of trade" see some virtue in their proposals, but those who are thoroughly familiar with trade, and who are anxious to have all trade transactions based upon a sound, healthy, moral basis know full well that any system of merchandising that is based upon the placing of a higher price on any article to a customer, and then handing the increased price back as a bonus or a dividend or a bribe to secure and hold the trade, by or through any pretext whatsoever, is wrong in principle and commercially unsound, and it is for this reason that reputable and honorable retail merchants will have nothing to do with business methods of that character.

Not On Sound Basis.

If the claims put forth by these so-called Cooperative Societies were true, and the principles upon which they are founded were correct, everyone conducting a retail store would adopt the same system, but the cooperative system is not adopted because the principles upon which they are founded are commercially un-

sound, and their methods can never appeal to those retail merchants who want to see the retail trade of Canada placed upon a higher plane.

An Important Duty.

Believing, therefore, that we, as retail distributors, are an absolute necessity, and that our services cannot be dispensed with, we feel that we have an important duty to perform in every community throughout Canada, and we further believe that owing to our financial position, our absolute necessity, and our numerical strength in every city, town and village throughout "working classes" or the "manufacturers" or "producers" can be intelligently considered without taking the great problem of distribution into consideration as well.

Circle Is Complete.

Retail merchants stand in a very unusual position in every community. They reach out and take the goods from the producer and manufacturer and hand them to the consumer. Every increase that is made to any article, whether it is through increased wages, the increased cost of raw materials, increased transportation, increased rent or the increased overhead expenses of every class through whose hands any product passes, is collected again by the retail merchant from the consumer. The higher wages go the higher will go the prices of the articles created by the wage earners. The circle is complete and no system of reasoning can alter this truth. The law of supply and demand is the basic law upon which everything is founded. The dearer goods are the less profit the retail merchant makes, as the demand is lessened, and his business turnover is, therefore, less.

High Wages—High Merchandise.

In order that workmen can be able to purchase all those things that are necessary for their actual comfort, they must reveive a salary more than equal to the value of the actual things required so as to enable them to lay aside sufficient for old age, etc. If wages keep climbing up, merchandise will go on climbing up, and there is no scheme that can be proposed that will prevent it. If wages climb higher on one class of goods than they do on others, the workmen will be limited to fewer classes of goods and their comfort will be affected thereby. If, for instance, a working man received twenty-five dollars a week, and with that sum he could pay his rent, buy groceries, meat, fuel, light, clothing, boots and other actual necessities, and his rent was doubled, he would be compelled to foregoing purchasing some of the other articles of necessity, and, having to do without these necessities, he would immediately become discontented. On the other hand, whatever necessities he economized on it would injure the retail merchant who handled those lines, and he in turn would have to undergo the same weeding out process as that undertaken by the wage earner.

Community Affairs Inter-Related.

These simple illustrations are made for the purpose of showing how closely the affairs of every community are inter-related, and whenever one class is affected all classes are affected.

Our purpose in submitting these brief views on the problem of retail distribution, which is one of the most difficult problems for those who have had no practical experience in it to understand, is to point out that there is more capital invested, and more people employed in distribution than there is in production and manufacture combined, and that, in our opinion, no plan, no scheme and no device that can be suggested can ever alter it unless we turn our plan of civilization backward and all begin again to be tillers of the soil and makers of the things we use and require. No one would be satisfied to go back again to the simple life of making our own candles, and using flint instead of matches, and using a spinning wheel to make clothing out of sheep's wool. We have experienced life's comforts and we want them, and if we want them and must have them, we must pay for them. A meal provided in a million dollar hotel will always cost more than a meal provided in a tent. There is a price ticket on everything. The best things cost the most, and if we desire them we must be prepared to pay for them or go without them.

An Advanced Age.

To properly consider the subject we have before us we muct take conditions as we find them today, and not as they were a century or two ago. Today we have public schools systems all over the world. Boys and girls, and men and women, have been educated to try and think. In every sphere of activity we see development. We find improved machinery in all lines of manufacture and production. We have labor-saving devices and we have transportation facilities that are unequalled in any age of the world. We have new devices for transportation, such as automobiles, automobile trucks, aeroplanes, bicycles, etc. In electric power and electrical devices we are in advance of anything in the history of the world. In telephones, telegraphs and cables, our advances are phenomenal, and all this with the many other new inventions such as gramophones, etc., which can produce the human voice, all these things have been brought about by those who have been educated to think, to diagnose, to investigate and to study.

While the thousands who have been giving their attention to the above commercial improvements have succeeded, another class has been thinking along other lines, but their thinking has produced different results.

What Lack of Commercial Training Reveals.

It is said that a little learning is a dangerous thing. In many cases this has proven to be true. Not having had practical experience and an opportunity of giving any study to the great problem of distribution, the rock upon which thousands upon thousands of persons engaged in other walks of life become shipwrecked is where they venture out upon its dangerous surface. These persons who have not had a proper commercial training advocate among other things the following:

1. The abolition of the middleman.
2. Direct purchase and sale between producers and consumers.
3. Municipal trading in coal, wood, milk and other articles of common use.
4. Public retail markets to enter into competition with tax-paying retail merchants who carry vegetables all the year round, whereas consumers cannot buy vegetables in the market when the temperature is below freezing point.

5. Without knowing the unsound, commercial basis upon which so-called "Cooperative Societies" are established, they advocate their adoption.

Wrong Thinking at Root of Trouble.

In our opinion, it is wrong thinking of this character that lies at the root of our present troubles and unrest today. The remedy for this false thinking lies at the door of the retail merchants themselves. Believing, as we do, that no intelligent system on earth can be devised to abolish the retail merchant, or whereby all means of retail distribution can be operated entirely by the State, and that all men must have the right to develop their own lives as they deem best for themselves, without injury or interference with the rights of others, it is our duty to make our claims known.

Retailers Here to Stay.

We wish, therefore, to repeat again that the most difficult problem of all problems for the average student of political economy to understand is that of the distribution of merchandise at retail. It has puzzled wise men before corn was sold in Egypt, and it will puzzle wise men and social economists until the crack of doom. Retail merchants have been on earth for centuries, and they will be here for all time. You can devise no plan that will abolish them because they are an important and essential part of every community. They comprise the active, independent and free men of every municipality. Their chief desire is to be allowed to do their business on a sound, business basis and their chief enemy is municipal and legislative restrictions that are proposed to be placed upon them by those who do not understand the simplest principles of buying and selling.

Few Labor Troubles.

As to the labor troubles of retail merchants, they have very few. Most of their clerks are their friends. A young man who enters behind the counter of the average retail merchant's store must take an interest in the business. He must be pleasant and agreeable with the customers of the store. The proprietor knows his habits, knows his Christian name; he calls him Bill or Bob and he interests himself in his work, and encourages him to develop his character. It has often been said, and we have never heard it disputed, that the best business college in the world for a young man to enter is behind the counter of an honest retail merchant.

Influence for Good.

A retail merchant who places his name over his door and who is always before the public, has a stake in the community, and his influence is for good and not for evil. Strikes, lockouts and hold-ups are never heard of in ninety-seven per cent of the retail stores in Canada, nor will they ever be heard of, because each store has its own plan of paying wages or giving commissions on profits, or giving bonuses or increasing salaries according to the ability of the clerk to earn. No system of paying all clerks the same salary, even in the same class of trade, could ever be adopted, because the clerks themselves would object to it. The principle that exists, and which always will exist, is to pay clerks according to their worth to the firm. This is the only fair system and the only one that will give them an incentive and an ambition to some day become their own masters. In Canada today every young man who is ambitious and who is willing to devote his time and thought to the business of his employer in the retail trade can find an opportunity of advancing to the highest position in the store, or becoming a partner, or eventually entering into business for himself. The first thing, however, that must be done is to impress upon the public mind that the man behind the counter is performing equally as useful and important work in the community as the man behind the lathe or the man behind the plough.

Occupy Most Important Position.

As retail merchants, in the past we have been too docile and too unconscious of our own importance in the community, and we have allowed all sorts of reports to be circulated by those who know nothing about the problem of distribution, being of the opinion that the public would not believe the statements made. In the future we hope to remedy this condition by taking our proper place in the community and insisting upon equal recognition with all other kinds of useful employment. As stated before, we occupy the most important position in the life of every well ordered community. We are here because we are required, and we will be here for all time, and there is no other system of distribution that can supplant us.

For this reason, if for none other, the Dominion Government must recognize that it is essential that no unfair or discriminatory legislation should be passed that will hamper our progress or interfere with our rights as free citizens. At the present time we welcome the opportunity to be able to lay before the special committee of the House of Commons, which has been appointed to investigate the cost of living, all the facts concerning the retail trade that we have in our possession, as we feel that the more we make our condition public the more the public will respect and appreciate us.

PATENTS ANIMAL TRAP.

Grant Wellington Howe, Hornepayne, Ontario, Canada, has procured United States patent rights, under number 1,310,340, for an animal trap described in the following:

1,310,340

A spring support for the pans of steel animal traps, including a clamp formed with telescoping slides provided with jaws adapted to engage the edges of the pan, said clamp being adjusted to fit different sizes of pans, and a light spring carried by the clamp and interposed between the pan and the base of the trap.

WHO MAKES PAN WITH HINGED COVER?

To American Artisan and Hardware Record:

Can you tell us who makes a one piece drawn pan with a hinged cover? This should be 12"x9½"x3" or a little larger.

The Odorless Humidity Supplying Gas Heating Corporation.

2358 Indiana Avenue, Chicago, August 5, 1919.

REGISTERS TRADE-MARK FOR SAWS.

Under serial number 115,339, United States patent registration has been granted to Henry Disston and Sons, Incorporated, Philadelphia, Pennsylvania, for the trade-mark shown in the accompanying illustration. The Company claims use since December 9, 1918, and the claim was filed January 21, 1919. The particular description of goods is saws.

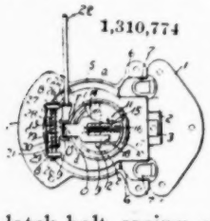
LEARN THE GOODS YOU ARE SELLING.

If it is possible, use the goods yourself which you are selling. Take your own medicine. Then you will believe in your goods enthusiastically, wholeheartedly. You will know they're good. Buy from the store in which you work. Be an enthusiastic booster for your own goods and your own firm.

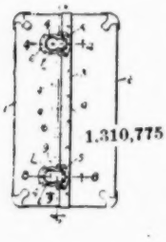
Sweep out of your mind all feeling of doubt and uncertainty. You are working for a good firm which handles quality goods. You are not trying to persuade customers to waste money. You are not trying to trick them into buying something which they cannot afford or do not need. You are doing them as great a favor in selling them your goods as they are doing you in buying.

ACQUIRES TWO PATENTS FOR LOCKS.

Under numbers 1,310,774 and 1,310,775, United States patent rights have been granted to John Wolf, Topeka, Kansas, for the locks shown in the accompanying illustration:



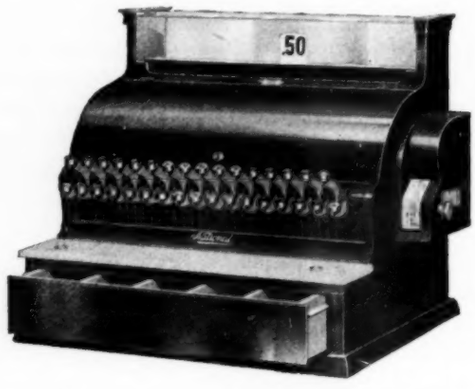
Number 1,310,774: A lock comprising two sections movable into position for locking, a spring-controlled leaf mounted on one section and foldable against the opposite section, the latter section being provided with an opening, a latch-bolt casing carried by the leaf of the first section and receivable by the opening of the opposite section for a locking position of the sections, a spring-controlled latch-bolt in the casing carried by the leaf, and foldable therewith to and from the opposite section, and a keeper on the last mentioned section movable across the path of movement of the latch-bolt to and from the opposite lock section.



Number 1,310,775: In combination with a trunk provided with two sections in hinged relation and abutting with their free edges for a closed position of the trunk, a lock comprising a socket member on one section and a hinge-leaf on the opposite section adapted to enter the socket of said socket member, a latch-lock removed from the first mentioned lock and comprising a socket member on one of the trunk sections and a hinge-leaf on the opposite section adapted to enter the socket of the socket member, a latch-bolt on the hinge-leaf, the socket members and hinge-leaves of the respective locks being disposed on corresponding sections of the trunk, a keeper, and an operating rod on the inside of the trunk leading from the keeper to the first mentioned lock, the socket member of the first lock and the trunk wall being provided with a common opening through which the rod may be seized from a point outside the socket-member aforesaid with an opening of the leaf locked thereto, and the latch-lock unlocked by a movement of the rod in proper direction.

IS RESULT OF EXPERT WORKMANSHIP.

The well-known labor saving machine, the National Cash Register, is shown in the accompanying illustration. This excellent device is manufactured by The National Cash Register Company of Dayton, Ohio, who have offices in all the principal cities of the country. The National Cash Register is used in every line of business all over the world where money



National Cash Register, Made by The National Cash Register Company, Dayton, Ohio.

is handled and accounts are kept. The Company states that these registers are the result of thirty-five years of study and invention. It is said that 7100 people, 21 buildings, 40 acres of floor space, and 2475 patents covering 35,000 claims are required to make the National Cash Registers. They are constructed of the highest grade materials by expert mechanics and are durable and well made. The National Cash Register Company of Dayton, Ohio, will be pleased to send descriptive circulars and details to those requesting them.

SECURES PATENT FOR PRUNING SAW.

Albert S. Carter, Philadelphia, Pennsylvania, assignor to Henry Disston and Sons, Incorporated, Philadelphia, Pennsylvania, has obtained United States patent rights, under number 1,310,904, for a pruning saw described herewith:

The combination in a pruning saw, of a saw blade; a support to which the blade is attached; a spring arm having a member at each side of the blade and secured to the support at the base of the blade, the arm extending beyond the blade so as to engage a limb and guide it into the space between the arm and the toothed edge of the blade.

GETS PATENT FOR SCREW EXTRACTOR.

Charles A. Speirs, The Dargle, Natal, South Africa, has been granted United States patent rights, under number 1,310,510, for a screw extractor described in the following:

1,310,510.

A screw extractor comprising a pair of pivoted jaws formed with recessed portions to receive a screw head, and nibs formed on said jaws for insertion within the slot of a screw head.

OPPORTUNITIES FOR FOREIGN TRADE PRESENTED BY BUREAU OF FOREIGN AND DOMESTIC COMMERCE.

The Bureau of Foreign and Domestic Commerce through its Special Agents, Consular Officers and Commercial Attachés is receiving information of opportunities to sell hardware and kindred lines in several foreign countries. Names and locations will be supplied on request to the Bureau in Washington or its District Offices. Such requests should be made on separate sheets for each opportunity, stating the number as given herewith:

30083.—The general manager of a commercial corporation in this country is about to leave for the establishing of new agencies in Cuba, Panama, Colombia, Ecuador, Peru, Chile, Argentina, Brazil, Bolivia, Uruguay, Paraguay and Venezuela. He desires to secure direct representations from manufacturers and exporters for the sale of hardware, agricultural implements, etc.

30091.—A firm in Spain desires to purchase all kinds of hardware, cutlery, tableware, flatware and hollow ware, novelties and house furnishing goods of all sorts suitable to the hardware trade. Quotations should be given f. o. b. New York. Terms, cash against documents. Correspondence should be in Spanish. Reference.

30094.—An American firm which is sending a representative to establish agencies in Argentina, Paraguay, Uruguay and Brazil desires to secure the representation of manufacturers of farm machinery, hardware, automobiles and accessories, etc. Reference.

30096.—The purchase of handpower machines for carpenters' use is desired by a company in India. Quotations should be given c. i. f. port in India. Payment by sight draft. Reference.

30103.—A firm in Sweden desires to secure the sole representation in Sweden, Norway, Denmark, Finland, Poland, Baltic Provinces, and Ukraine, from manufacturers of agricultural machinery, workshop machinery, small household hardware, tools, rails and wagons. Catalogues and the lowest quotations c. i. f. Copenhagen, are requested. References.

30104.—A firm has been recently established in Russia to engage in general export and import business and desires to be placed in communication with American exporters with a view to stimulate trade with the Caucasus region. A representative of the firm is expected to leave for the United States in the near future.

30121.—An American firm having opened a branch office in the Philippine Islands desires to secure the representation of manufacturers of general merchandise and raw materials. References.

30122.—An agency on a commission basis is desired by a firm in Sweden for the sale of copper and other metals. Reference.

30123.—A commission agent in Venezuela desires to obtain representation in Venezuela and Colombia of manufacturers of hardware. Correspondence should be in Spanish. References.

30124.—A firm in Italy desires to secure an agency for the sale of automobiles and accessories and other goods needed in that country. Catalogues and price lists are requested. Correspondence should be in Italian or French.

30132.—A firm of merchants and commission agents in India desire to represent manufacturers of metals, hardware, paints, varnishes and general sundries. Quotations should be given c. i. f. destination. References.

30145.—An American firm representing importers in the Far East desires to be placed in communication with manufacturers and exporters. References.

30148.—A commission agent in Guatemala wishes to represent manufacturers of barbed wire, etc. Correspondence should be in Spanish. References.

30149.—The purchase of copper, brass, tin, ingots in sheets, tubes, scrap, etc., iron sheets for all purposes, and galvanized and tin plates, is desired by a firm in Switzerland. Quotations should be given c. i. f. European port. Terms, payment through bank on arrival of goods. References.

30154.—The purchase from manufacturers of hardware, house furnishings and kitchen utensils, such as lawn mowers, clothes wringers, carpet sweepers, spoons, knives and forks, and meat choppers for mixing meat and flour, also electrical installation material, everything to be of first-class qualities and in large quantities for wholesale trade, is desired by a firm in Denmark. References.

COMING CONVENTIONS.

The American Hardware Manufacturers' Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 15, 16, and 17, 1919. F. D. Mitchell, Secretary, 4106 Woolworth Building, New York City.

The National Hardware Association, Marlborough-Blenheim Hotel, Atlantic City, New Jersey, October 15, 16, and 17, 1919. T. James Fernley, Secretary, Philadelphia, Pennsylvania.

Automobile Accessories Branch of the National Hardware Association, Hotel Sherman, Chicago, Illinois, December 8 and 9, 1919. A. H. Nichols, Chairman, Detroit, Michigan.

Oklahoma Hardware and Implement Association, Oklahoma City, Oklahoma, December 9, 10, and 11, 1919. W. B. Porch, Secretary, Oklahoma City, Oklahoma.

Wisconsin Retail Hardware Association, Milwaukee, Wisconsin, February 4, 5, and 6, 1920. P. J. Jacobs, Secretary, Stevens Point, Wisconsin.

Minnesota Retail Hardware Association, St. Paul Auditorium, St. Paul, Minnesota, February 17, 18, 19 and 20, 1920. H. O. Roberts, 1030 Metropolitan Life Building, Minneapolis, Minnesota.

New York State Retail Hardware Association, Onondaga Hotel, Syracuse, New York, February 17, 18, 19 and 20, 1920. Exhibition in State Armory. John B. Foley, Secretary, 607 City Bank Building, New York City.

New England Hardware Dealers' Association, Mechanics' Building, Boston, Massachusetts, February 23, 24, and 25, 1920. George A. Fiel, Secretary, 10 High Street, Boston, Massachusetts.

Ohio Hardware Association, Hotel Gibson, Cincinnati, Ohio, February 24, 25, 26 and 27, 1920. James B. Carson, Secretary, Dayton, Ohio.

RETAIL HARDWARE DOINGS.

Iowa.

The hardware firm of Travis and De Freese, Sidney, has been dissolved, G. T. De Freese continuing the business.

R. L. Dunn has bought a hardware business at Ridgeway.

Leo Healey has sold his stock of hardware and implements at Mackburg to the Buckingham Hardware and Implement Company.

Wells and Stump will open a hardware business at Hedrick.

Kansas.

P. A. Braff has sold his hardware, furniture and implement business at Savonburg to Lyle A. Cooper and F. A. Huff.

Kentucky.

The Marion Hardware Company, Marion, suffered a fire loss of $12,000, insurance $4,000.

Missouri.

Frank Heckler has sold his hardware store at Warrenton to W. N. Elliott.

The King O Wammach Company has opened a hardware store at Aurora.

Nebraska.

E. D. Gooden has bought a hardware store at Hubbell.

E. A. Ritzen has bought the Cramer hardware business at Hardy.

North Dakota.

The Weber Hardware Company will open a hardware store at Cleveland.

Ole Hansen has sold his hardware store at Milnor to John L. Hagen.

The Mitchell Company has opened a hardware store at Ellendale.

Ohio.

The Allott Hardware Company, Alliance, is about to begin a big improvement in its building.

Tennessee.

The Dyersburg Hardware Company, Dyersburg, has been incorporated for $10,000 by J. E. Benson, J. C. Doyle, F. W. Latta and G. W. Miller.

Wisconsin.

Elskamp and Wiedman have let a contract for the erection of a new store for their hardware business.

ADVERTISING CRITICISM AND COMMENT

Helpful Hints for the Advertisement Writer

It is the nature of women to prefer daintiness, beauty and adornment. In view of the fact that they are the buyers of things for the home, it is good pub-

A Pretty Lawn Makes Your Home Attractive
You will need a lawn mower, some hose and garden tools to keep it in shape We have them all ready and awaiting your pleasure They are priced very low, consistent with quality Consequently you needn't hesitate to get everything you need at once It will be as represented if you buy it from this store of quality hardware Every article backed by our guarantee
W. W. THOMAS HARDWARE CO.
310 Twiggs Street
Phone 4457

licity to appeal to their sense of neatness. This is effectively done by the W. W. Thomas Hardware Company in the advertisement reproduced from the *Tampa Tribune,* Tampa, Florida. Typographically, the advertisement is well balanced. The illustration arrests attention. There is is an unmistakable tone of sincerity in the wording of the text which is intensified by the final sentence stating, "Every article backed by our guarantee."

* * *

Logic is defined as the science or art of exact reasoning. It is simple because it goes straight ahead and keeps the thought from wandering away from the

Summer Comfort
is essential to Horses and Cows.
A Comfortable Horse will do more work and require less food.
A Comfortable Cow will produce more milk on the same feed.
Flies and Mosquitoes are the chief causes of discomfort to Horses and Cows during summer.
So-Bos-So Is The Remedy.
Apply with sprayer. We sell—
So-Bos-So.....@ $1.50 per gallon
Sprayers.....@ 60 cts. 85 cts. $1.00
Hay Hardware Co.
Phone 332 — 75 Main Street

line of argument. A good example of logic is had in the advertisement of the Hay Hardware Company which appeared in the *Daily Northwestern* of Oshkosh, Wisconsin. The copy is so written that it precludes doubts and objections. The statements are indisputable. The conclusions which are drawn follow logically from the premises. Everyone knows that a comfortable horse will do more work and require less food. Dairymen say that a comfortable cow will produce more milk on the same feed. Flies and mosquitoes are the chief causes of discomfort to these animals during summer. A remedy which can be applied with a sprayer is an easy and logical way to keep the animals free from flies and mosquitoes. The logic of the advertisement is given a practical turn by setting forth the prices for the remedy and sprayer. The advertisement is printed in type that puts no strain on the eyes; and there is plenty of white space for the necessary contrast and emphasis.

* * *

The average customer feels himself much in the same predicament as the man depicted in the advertisement of the H. H. Tomkins Hardware Company, published in the *Herald-Democrat* of Leadville, Colorado. He experiences a sense of relief when he reads that at least in one line of goods he can effect a sav-

To a Man Up a Tree
It looks as if prices on nearly everything are not going down. But it does not apply to our prices on
OUTING SUPPLIES
We have made a sharp reduction in our prices on
TENTS and WAGON COVERS
You can make a big saving over last year's prices by buying now. We are headquarters for Guns, Ammunition, Camp Stoves, Dutch Ovens and all kinds of Camping Supplies.
THE H H. TOMKINS HARDWARE CO.
PHONE 202

ing over last year's prices. While not absolutely necessities of existence, outing supplies are widely used. The store which offers them at attractive prices is certain to draw trade. The H. H. Tomkins Hardware Company's advertisement secures notice by the force of its make-up as well as by persuasion of its wording.

HEATING AND VENTILATING

ANNOUNCES BARGAIN SALE OF REGISTERS.

F. Meyer and Brother Company of Peoria, Illinois, informs the trade of a bargain sale of high grade registers. The Company has a large quantity of registers in stock and they are being closed out at big discounts. It is stated that there is absolutely nothing wrong with these registers except that they are not "the latest style." Every one is guaranteed to be in good condition and the F. Meyer and Brother guarantee needs no introduction. On another page of this issue of AMERICAN ARTISAN AND HARDWARE RECORD, readers will find a list of all these registers giving sizes, designs and discounts.

DISCUSSES METHODS OF CONTROLLING ATMOSPHERE IN THE HOUSE.

Air conditioning is a comparatively new science. Its practical application to the warm air heater is of the utmost importance to the development and wider adoption of the warm air heater and, incidentally, to the financial advantage of all concerned in the industry. It is, therefore, of interest to dealers and installers of warm air heaters to study the subjoined address on Air Conditioning, delivered by E. T. Murphy before the Roofing, Metal and Heating Engineers of Philadelphia, Pennsylvania:

When Mr. Locke, Chairman of your Meetings Committee, asked the writer to talk to you on the question of "Air Conditioning with relation to House Heating," I agreed to do so with many misgivings.

The Warm Air Heater has long been a dark mystery to me, my complete association with this industry being three years' experience in a West Philadelphia operation house heated by a warm air heater which was supposed to deliver some warm air to various parts of the house. I put up a good battle with this warm air heater, tried choking and starving it with coal, opening and closing dampers, and covering cellar pipes, but I still failed to keep the family happy. Since I admit defeat at the mouth of this weird creature, it seems decidedly presumptuous for me to talk to you gentlemen. You have tamed this animal and made it an effective adjunct to human health and comfort.

I found by observing this warm air heater and dissecting its various component parts carefully, that there was a mysterious cast iron pan located in the cold air intake, which was presumably to be filled with water occasionally with an idea of delivering some humidity through the house. I was never able to determine just where the water was to obtain the necessary energy to convert it into a gas. Cold air has no energy to spare. A bucket of water put in this pan weekly seemed to fill all of its needs, which I have to admit, were extremely modest. You will see from this that I know nothing about the science of Air Conditioning as applied to a Warm Air Heater except that I labor under the vague suspicion that many existing heating plants are sadly in need of more engineering attention than they received.

The blower system of heating and ventilating, however, has been more fortunate, and the last sixteen years has seen this branch of the heating industry graduate from so-called Heating and Ventilation, to Air Conditioning. The difference is very concise and simple: Air Conditioning gives due consideration to the Psychrometer instead of limiting its field of activity to the thermometer. As you all realize, the human body and almost all materials, are affected by the readings of the psychrometer more than the thermometer.

The work of the company with which I am associated, has been mainly industrial, observing and controlling atmospheric conditions with relation to their effect upon materials in the course of fabrication, treatment, or storage, but necessarily some consideration has been given to its relation to human health and comfort. Some of our observations might be useful to you gentlemen looking toward the installation of some device or improvement in present devices to such extent as to advance the science of Warm Air Heating to Air Conditioning, without undue expense or complication of parts. Development in this direction must be based on certain fundamental information as to the laws of Humidity.

In the first place, the existence of water vapor mixed with air is due to the peculiar properties of water and not to any capacity that air has for the absorption of moisture, as is popularly supposed. Since water is present over almost the entire surface of the globe, it is impossible to handle or treat air without consideration of the co-existent water vapor. The amount of vapor contained in a given space, say a cubic foot, is dependent upon its temperature and percentage of saturation only, and is usually expressed in grains per cu. ft. This is termed Absolute Humidity.

When we speak of Relative Humidity, we mean the ratio of the weight of water vapor in a given space, to the weight that the same space would hold when fully saturated at the same temperature. For instance, 70 per cent humidity means 70 per cent of saturation at the temperature given. When the space is fully saturated, we state that it is at the dew-point. It can hold no more vapor at that temperature and any reduction in temperature would cause condensation. It is obvious that any amount of moisture must have a dew-point for the temperature can always be so lowered that condensation must take place.

The liquid water, with which we are all so familiar, has a keen desire to conceal itself as a gas. So bashful and retiring are its habits that it will seize the necessary heat, if available, from its boon companion "Air," absorb this energy as latent heat, and float away as a dry gas. In doing this, however, it furnishes us with a means for detecting its presence, together with details of its weight and measurements. The best clue we have is indicated by a simple instrument with a formidable name; that is, Sling Psychrometer. Its elements are two thermometers mounted on the same base, one with a dry mercury bulb and the other covered with soft muslin wetted in clean water and drawn tight. This instrument is provided with a handle which permits it to be whirled rapidly; the result is a depressed reading of the wetted bulb in proportion to the evaporation therefrom and is thus a measure of the relative saturation of the space in which the instrument is whirled. This differential reading is termed "Wet Bulb Depression" and the term is frequently used in discussion of the science of Air Conditioning.

The wet bulb temperature exceeds in importance every reading that you can take; that is, either the dry bulb according to the ordinary thermometer, or the dew-point as determined by condensation, or from humidity tables. It represents the total energy contained in the mixture of air and water vapor. You will appreciate at once its important relation to human comfort when you consider that the human body is in itself a wet bulb depending on evaporation and convection to dissipate its heat. From this it will be obvious to you that consideration of the temperature only to which a building should be heated, is no real analysis of your problem. Better results should be obtained if you determine the wet bulb temperature to which you desire to heat a home and design your apparatus accordingly.

As before stated, I am not thoroughly versed in the various attempts that have been made toward Humidification in connection with Warm Air Heater, but nothing that I have seen approaches a solution of the problem as considerable heat must be applied to the water to cause the necessary evaporation and even on small installations, provision should be made for the evaporation of at least two quarts of water an hour. I am not going to attempt to suggest any form of apparatus for this purpose, but will try to point out a few reasons why a moderate humidity is desirable and should receive consideration at your hands.

For some reason, the medical profession have taken a peculiar stand toward heating and ventilation. It should be within their province to lay down the rules for desirable conditions from the health and comfort point of view, and the work of the engineer to accomplish the results thus specified. So far they have been decidedly critical of our efforts in that direction and their criticism has been destructive rather than constructive.

The nearest we have to a definite statement of desirable conditions is by Dr. E. V. Hill, of the Department of Health, in Chicago. In a paper presented before the semi-annual meeting of the American Society of Heating and Ventilating Engineers in July, 1917, Dr. Hill presented a chart on which was plotted zones of Temperature and Relative Humidity. This shows a zone of Comfort, a Cool zone, a Cold, a Warm, and a Very Warm zone. A mean line drawn through the Comfort zone began at 71 degrees—30 per cent relative humidity, wet bulb 54 degrees, and ended at 59½ degrees—78 per cent relative humidity, wet bulb 55½ degrees. I would like to call your attention to the fact that through this wide range of temperatures and relative humidity, the wet bulb varies only 1½ degrees. Unfortunately this chart gives no consideration to Air Motion. If same is at all perceptible, a higher temperature or higher relative humidity must be maintained than that indicated by the Mean Comfort Line.

Prof. Busey, in a series of twenty-nine observations, taking into consideration the wet bulb only, found the following:

	Wet Bulb
Too Warm	61
Too Warm	60
Comfortable	59
Comfortable	56.5
Comfortable	55
Comfortable	56
Too Warm	58.5
Too Warm	58.5
Comfortable	55.5
Comfortable	54.5
Chilly	55.5
Comfortable	59.5
Comfortable	63
Comfortable	57
Comfortable	57
Pleasant	59.5
Comfortable	54
Comfortable	54
Chilly	54.5
Comfortable	55
Comfortable	57.5
Comfortable	58
Comfortable	56
Comfortable	58
Comfortable	58
Comfortable	57
Comfortable	56.5
Comfortable	55.5

I would again call your attention to the marked uniformity of the wet bulb temperatures opposite Comfort. The average of the Comfortable wet bulb temperatures is 56½ degrees. At 65 degrees this would mean a relative humidity of approximately 57 per cent and 70 degrees, a relative humidity of 40 per cent. Expressed in grains of moisture per cubic foot, this would mean 3.86 grain per cubic foot at 65 degrees and 3.19 grain per cubic foot at 70 degrees; in other words, at the higher temperatures, a less moisture content would fall within the Comfort zone. At this point I would also like to indicate a fallacy in an argument used by people interested in humidification. While it is true that slightly lower comfortable temperatures can be maintained with higher humidities, resulting in a slight reduction in radiated heat, the total energy per cubic foot of air is practically constant. In raising the wet bulb by the addition of moisture, it is necessary to add energy, which is reflected by a slight increase in the coal bill instead of a decrease, as is sometimes claimed.

When you consider that outside air at 32 degrees, even if 70 per cent saturated, contains but 1.48 grains of moisture per cubic foot and that from 3 to 3½ grains is desirable, the necessity for the addition of moisture to heated buildings is at once evident. Assuming from the foregoing evidence that a 56 degree

wet bulb is desirable for the human comfort standpoint, the construction of the average building furnishes a further slight difficulty. I refer to the usual single glazed window, which in cold weather forms an excellent condensing surface. It has been found in extremely cold weather that a dew-point of over 43 degrees sweats single windows. This would mean at 70 degrees in relative humidity, over 38 per cent would cause condensation. This corresponds to a wet bulb of 55 degrees. At 68 degrees a relative humidity of over 40 per cent with a wet bulb of 54½ degrees would cause sweating, so you will see that attempts to maintain ideal conditions must be slightly sacrificed to practical consideration. It would seem that the conditions at which you should aim would be a 55-degree wet bulb and 70-degree dry bulb in a single sashed residence, or 68 degree and 56 degree wet bulb in a double glazed residence.

If possible, the moisture content of the air should also be under automatic control, as any equipment designed for humidification in extremely cold weather would over-humidify in moderate weather, and this is almost as objectionable as dryness. In air conditioning installations with a blower system, the humidity is controlled in several ways, the regulation of the dew-point being the one in most common use. This could not, however, be applied to the Warm Air Heater, as the standard humidifier is a saturating device with provision for the elimination of all free moisture so that it is easy to regulate the temperature of saturation and thus the absolute humidity. A device, however, which could be applied to the Warm Air Heater is the Hygrostat, which could be of almost any hydroscopic material, expanding and contracting with changes in relative humidity, thus operating devices for controlling the temperature of the water to be evaporated or the quantity of water sprayed into the air supply to the rooms. The wet bulb also could be used for a similar purpose, but would only be effective when kept wet. It has been our experience that wet bulbs are usually neglected and should be avoided as far as possible as a control instrument.

So far we have considered humidity only from the comfort point of view. For the health consideration, we must necessarily turn to the medical profession. Dr. Henry Mitchell Smith, in a paper read before the Brooklyn Medical Society, points out very strongly the need for "Indoor Humidification" during the heating season. He says in part:

"The point to be emphasized is that every time we step out of our houses during the winter season, we pass from an atmosphere with a relative humidity of about 30 per cent into one with a relative humidity of, on an average, 70 per cent. Such a sharp and violent contrast must be productive of harm, particularly to the delicate mucous membranes of the upper air passages.

"The skin and the mucous membranes of the respiratory passages are the principal sufferers, since these tissues are always kept moist with their own secretions, and from them water is freely abstracted to satisfy this large saturation deficit, such air passing with every inspiration over the moistening surfaces nature has provided in the mucous membranes, calling for an enormous output of the fluid elements of these tissues. This leads to glandular over-activity and its consequent evils, the elaboration of which subject the scope of this paper does not permit.

"The overheating of our houses has been accepted as a prominent cause of 'catarrh,' but I am confident that the low relative humidity and consequently the large saturation deficit of the aqueous vapor in the atmosphere of our rooms in winter is much more important than is the overheating in itself, and it may be doubted whether the so-called damp climate of the sea coast or the shores of large inland lakes is in itself so responsible for the above diseases, as has been generally supposed. It seems much more likely that the great contrast between the indoor and the outdoor relative humidity in those regions is the real factor.

"If our rooms contained more moisture we could live more comfortably at a lower temperature. The overheating is required because of the low relative humidity.

"It is unscientific and arbitrary to lay down a fixed temperature as a standard for living or sleeping rooms unless the relative humidity is indicated as well.

"These tests were most instructive. In the first place it was observed that with a proper percentage of moisture 70 degrees Fahrenheit was uncomfortably hot, 68 degrees Fahrenheit warm, and 65 degrees comfortable. By proper percentage of moisture is meant one which is never below 50 per cent or above 70 per cent—average about 60 per cent.

"The former (65 to 68 degrees and 60 per cent) felt warm and balmy, the latter (72 degrees and 30 per cent), notwithstanding the higher temperature, chilly and dry, and the slightest motion of the air suggested a search for the source of suspected draughts.

"There is an indescribable sense of relaxation and 'poise' contrasting strongly with the feeling of nervous tension so frequently experienced in overheated dry rooms.

"It was satisfactorily proven that one may live during the coldest weather with perfect comfort in a room at 65 degrees Fahrenheit, where the relative humidity is kept at about 60 per cent.

"During the experiments upon the sensations produced by different percentages of saturation and in order to obtain the opinion of persons having no knowledge of the existing conditions, one room was equipped with a moistening apparatus and the temperature kept at 65 degrees to 68 degrees, with a relative humidity of about 60 per cent. An adjoining room, without a moistening apparatus and heated by an ordinary steam radiator, had an average temperature of 72 degrees to 74 degrees, with a relative humidity of 30 per cent. In every instance, and without at all knowing what the temperatures were in the two rooms, the opinion was unhesitatingly expressed that the first room was several degrees warmer than the second.

"During my experiments it was very noticeable how much more uniformly heated seemed all parts of the room in which there was sufficient moisture than when no moisture was artificially supplied. Under ordinary conditions of heating the uncomfortable difference in temperature between the parts of the room

that are near and those that are remote from a radiator is a familiar experience.

"It is easier to 'take cold' in a room at 72 degrees with a relative humidity of 30 per cent than in a room of 65 degrees with a relative humidity of 60 per cent.

"Generally speaking, dry air is an excitant, often causing sleeplessness and irritability, accompanied with a drier skin and quickened pulse. Moist air is more of a depressant, producing quiet sleep and slower circulation of the blood.

"After living in rooms with a lower temperature and proper relative humidity no one will be satisfied with the other conditions."

Prof. Theodore Hough, of the University of Virginia, adds the consideration that the objection to low humidity is due to the too rapid evaporation of water from the skin and air passages. The skin thereby becomes dry and tends to chap, cutaneous nerves are irritated in an unpleasant manner, with more or less disturbance of affairs in the central nervous system. Especially the drying of the conjunctival and sclerotic seems to be a matter of considerable importance. I suppose, too, that when the skin dries too quickly there is greater tendency to the deposition of the solids of perspiration in the ducts of the sweat glands. These ducts are not flushed out as they should be.

Dr. Wm. Moir, Director of Medicine, Aberdeen, testified before the Parliamentary Committee of Ventilation of Weaving Sheds, that rheumatism is more likely to be benefited by a high relative humidity than otherwise and that bronchial cases benefit by a humid atmosphere more than a dry one.

Dr. Wm. Wilson, of the Weather Bureau, states that catarrhal troubles have been relieved and apparently cured by the introduction of moisture into the air to bring conditions somewhere near normal.

There are many corroborative opinions under the medical profession of cases under their own observation, but as I have before stated, they differ in opinion widely as to what conditions should be maintained with the maximum benefit. The American Society of Heating and Ventilating Engineers has undertaken the founding and support of a Bureau of Research, in the Bureau of Mines Building at Pittsburgh. One of the first undertakings of this Research Bureau will be the determination of the very point which we are considering and it is to be hoped that inside of another year we will be able to specify the exact conditions which should be maintained economically for both human comfort and health.

From all appearances, the Warm Air Heater is "coming into its own." We have had such excellent results in the Blower Game from the application of engineering to the industry, that there is little doubt that an equal consideration of the method of installation of Warm Air Heaters will give the steam and hot water system a difficult position to maintain.

While it is off the track a bit, it may interest you gentlemen to know that Air Conditioning as a science has been applied to over 125 industries and is still in its infancy. There is hardly a manufacturing process that is not affected by weather. Work runs better on certain days than on others, and the Air Conditioning Companies have made it their business to find out what kind of days the "good days" were and make "Every Day a Good Day." This applies all the way from candy and bakeries to high explosives; from the macaroni manufacture to the blast furnace, and again down to the regulation of the moisture content of materials such as yarns, tobacco, paper, gun powder, etc., so you will see that Air Conditioning is beginning to be an important industry and can worthily be given careful consideration in your particular line of work.

I wish to thank you for giving me this opportunity to talk to you on one phase of the business of trying to make "Every Day a Good Day" in a home, even if nature occasionally seems to set herself resolutely against our attempts.

HEATER INSURES ECONOMY.

The accompanying illustration shows the Keith's Monitor Wood Warm Air Heater, manufactured by the Keith Furnace Company of Des Moines, Iowa.

Keith's Monitor Wood Warm Air Heater, Made by the Keith Furnace Company, Des Moines, Iowa.

It has been proven that the increased price of coal has greatly promoted the demand for wood-burning heaters and the Keith's Monitor Wood Warm Air Heater has been put on the market to fill this demand. It is made in three sizes to meet the requirements of all homes. The fire box consists of two heavy cast iron corrugated parts that are efficient and durable. The radiator is large, and its heating value is increased by the roomy opening through the center. The heat of combustion is carried to the extreme rear of the fire box where it enters the radiator. It is then forced to travel entirely around it before reaching the outlet or smoke-pipe collar. The casing rings are the steel-bar type in one piece. A suitable wood grate and an extra large feed door are prominent features. Dealers should write today to the Keith Furnace Company of Des Moines, Iowa, for further particulars.

The Homer Furnace Company, Homer, Michigan, has broken ground for a new plant at Coldwater.

HAS BEEN A SATISFIED SUBSCRIBER FOR OVER THIRTY YEARS.

To AMERICAN ARTISAN AND HARDWARE RECORD:

In renewing my subscription I will state that I have been a satisfied subscriber to AMERICAN ARTISAN AND HARDWARE RECORD for over thirty years. I can truthfully say that never in all that time have I received a copy from the reading of which I did not derive some positive benefit. I believe in trade papers and I always read your journal through from cover to cover—advertisements and all.

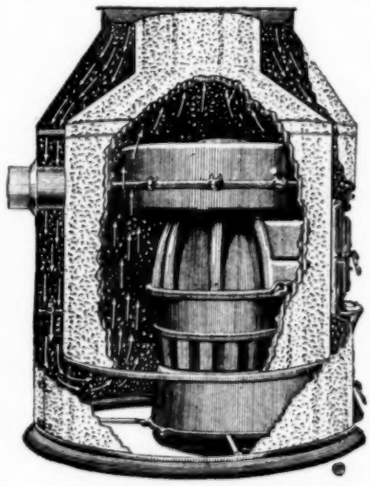
Yours truly,

G. A. BYOR.

Edgar, Nebraska, August 4, 1919.

BURNS ANY TYPE OF FUEL.

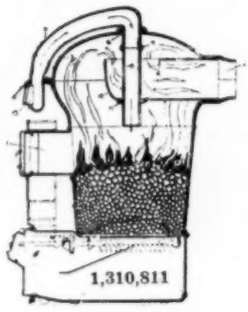
The Rudy Pipeless Warm Air Heater shown herewith is made by the Rudy Furnace Company of Dowagiac, Michigan. This heater is so constructed as to burn any type of fuel economically and well, and is durable and easy to operate. This heater is particularly adapted to buildings where only a limited basement space is available for a heating plant, for churches, schools, halls, stores and homes where it is desirable to eliminate basement pipes. The air-tight construction of the Rudy heater, states the company, eliminates dirt, gas, smoke or soot. The ash pit is deep and roomy, holding several days' ashes before endangering the grate. The receding front makes it easy to fire. The great volume of air circulated by the large casing and registers keeps the heater from overheating or burning out. The Rudy pipeless heater is made of the well-known Rudy charcoal iron—all cast iron. There is a triple lining between the warm and cold air chambers that is made of heavy galvanized iron, asbestos and crimped bright tin, making a dead air space. The castings are exceptionally heavy, being made to stand heavy firing. The company offers the choice of oxidized copper or Japan registers. Dealers and installers may obtain further particulars by addressing The Rudy Furnace Company, Dowagiac, Michigan.



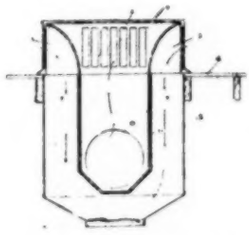
Rudy Pipeless Warm Air Heater, Made by The Rudy Furnace Company, Dowagiac, Michigan.

PATENTS A WARM AIR HEATER AND A DUPLEX REGISTER BOOT.

James M. Triggs and William D. Redrup, Huntington, Indiana, assignors to The Majestic Company, Huntington, Indiana, have procured United States patent rights, under number 1,310,811, for a warm air heater and a duplex register boot, described herewith:



Number 1,310,811: In a warm air heater, a fire-pot, a dome forming a combustion chamber and having an exit flue, a smoke bowl within said dome and having a flue leading therefrom and connecting with said exit flue, and an air introducing pipe extending down through the central portion of said dome, from without the same and through said bowl, and terminating adjacent to the top of the fire-pot, said bowl being supported by said pipe.



1,310,812

Number 1,310,812: A boot of the class described, comprising a casing open at its top and having a downwardly converging bottom with an outlet opening at its center, partitions disposed in spaced relation transversely of said casing and connected at their lower ends in vertically spaced relation to said bottom opening, said partitions being jointed at their side edges to opposite side walls of said casing to cooperate with the casing to form a central passage and opposite side passages all open at their tops with the side passages extending under the bottom of the central passage and communicating with said bottom opening, said central passage having a side inlet opening near its bottom intermediate said side passages.

REPLACES INEFFICIENT SMOKE PIPE.

It is said that every householder usually has some trouble with the matter of smoke pipe burning out or being eaten out by the corrosive effects of soot that lodges in the smoke pipe. The average life of the smoke pipe is from one to two years, according to the care and fuel used. In the illustration herewith is shown a section of the Everlasting Cast Iron Smoke Pipe, made by the Waterloo Register Company of Waterloo, Iowa. It is made in sections, bolted together and can be tightened to fit openings. The sections are interchangeable, to fit each other, and will nest for shipping. The pipe comes in two-foot, one-foot and six-inch lengths to enable fitting to any distance and the fitted ends and bolted joints are said to make it self-supporting in ordinary conditions. The elbows are cast for either 45 degrees or ninety degrees turn, and being cast in lateral sections may be turned in any direction. For further information, dealers should address the Waterloo Register Company, 137 Rath Street, Waterloo, Iowa.

24 Inch Section Everlasting Cast Iron Smoke Pipe, Made by Waterloo Register Company, Waterloo, Iowa.

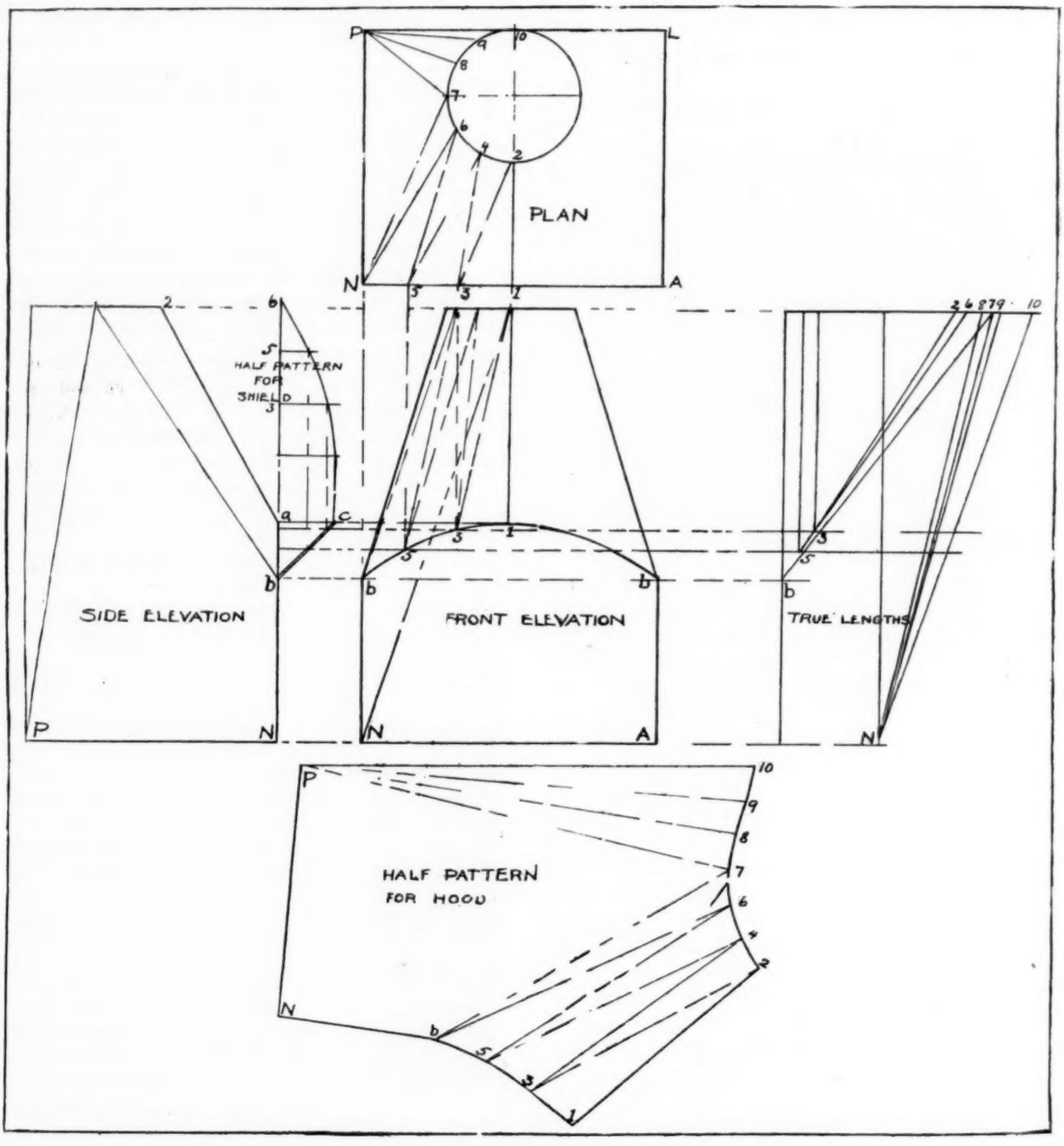
PRACTICAL HELPS FOR THE TINSMITH

PATTERNS FOR BLACKSMITH'S FORGE HOOD.

BY O. W. KOTHE.

Forge hoods are made in a great many different designs. Some blacksmiths prefer them one way and others another way. In this case we show one style of hood met with now and then because it is simple to construct and gives service.

Attention is called to the side elevation which may require the sides cut out a little more to prevent the workmen getting in the fire better. Also notice the front elevation and plan. In making the working drawing first draw the side elevation according to measurements and then project the front elevation from it in order to give the right curvature for the front opening. The plan can then be drawn with the round opening tangent to the back. The one-half of front curved line 1-b is divided into equal spaces and these lines are projected both ways for developing



Patterns for Blacksmith's Forge Hood.

the half pattern of shield and also to aid in establishing the true lengths. Observe from plan this article is treated similar to a square to round transition piece. According to side elevation the heel being longer than the throat. So we pick the lines 1-2-3-4-5-6-N-7 from plan and we set them over on our diagram of true lengths in the vertical lines as 2-4-6, etc. In the same way we pick the line P-7-8-9-10 and set them over from the vertical line N as 7-8-9-10. Lines drawn to the height N-3-5-b give us the true lengths.

To lay off the pattern for shield pick those spaces as 1-3-5-b from front elevation and set that off above shield of side elevation. Square out lines and erect lines from each point where similar lines cross the miter b-c and erect them into pattern. Through these points trace a line and you have the half pattern for shield.

To start the hood draw a line P-N equal to that length in side elevation. From N, square up a line equal to N-b of side elevation. Then pick true length N-7 and using P, as center as at 7. Next pick line b-7 and using b as center cross arcs in point 7. Set dividers to one of the spaces in the circle as 7-8 of plan and using point 7 in pattern as center, strike small arcs as at 6 and 8. Then pick true lengths b-6 and using point b as center cross arcs in point 6 of pattern. Then pick line N-8 and using P, as center, cross arcs in point 8. Next with dividers strike the small arcs 4 and 9. Reset dividers to the space b-5 from front elevation and using b in pattern as center cross arcs in point 5. Use true lengths 5-6 and 6 as center cross arcs in point 5. Then pick line N-9 and using P as center cross arcs in point 9. Repeat in this way until points 10 and 2 are established. The half wing for the back can be added by taking the line P-10 from plan and describing an arc using P in pattern as center. The back line of side elevation can be used for crossing this arc, using point 10 as center. Edges must be allowed for seaming and riveting.

DALLAS BRASS AND COPPER COMPANY WILL BUILD BIG FACTORY.

A five-story building of reinforced concrete concrete construction will be erected by the Dallas Brass and Copper Company on Institute Place, 138 feet west of Orleans Street, Chicago, Illinois. The cost is estimated at $200,000. The equipment of the factory will be of the latest type in every detail. Provisions have been made for health and safety of the employees. Lighting and ventilation will be the best that science can suggest.

DESCRIBES NEW METAL INVENTION.

Writing to *Commerce Reports* from Basel, Switzerland, United States Consul Philip Holland states that a new invention called conducting aluminum M. 277, which is said to be creating a profound impression, has been made by Dr. Georges Giulini, the most famous expert in the aluminum trade. This new metal is produced by putting the ordinary aluminum through a special patented process, by which it acquires the same mechanical qualities and capacities as bronze, copper, and brass without changing its specific weight.

It is said that the price of the new metal can be kept within very low limits; so that, even at the prewar prices of other metals, it will be able, by reason of its smaller specific weight, to compete with copper and brass very favorably. The fact that the new metal is a conductor will make it especially in demand in the electrical trade. The inventor anticipates for it also a good market among the builders of motor cars, aeroplanes, ships, and railway carriages. Leading men, to whom the invention is already known, are said to be much impressed with its possibilities.

HAS OIL-TEMPERED STEEL BLADES.

The Marshalltown Throatless Shears are made in different sizes, for working sheets from the thinnest metal up to and including one-half inch boiler plate. The heads are made of high grade steel castings and the bases of hardwood. The gears are of grey iron, the teeth of all fast running gears being cut from the solid metal. The blades are of special carbon tool steel, oil-tempered, and said to give the best possible service. All power shears are equipped with a sensitive friction clutch pulley, or gear if motor driven, which enables the operator to start and stop the shear instantly. The pinions are made of machinery steel with the teeth cut.

Marshalltown Throatless Shear, Made by the Lennox Throatless Shear Company, Marshalltown, Iowa.

Shears up to and including one-fourth inch capacity are made with the overhead drive, while the three-eighths inch and one-half inch shears have a gear drive enclosed in the base. The Marshalltown Throatless Shear, shown in the accompanying illustration, was specially designed for cutting in and out curves, straight or irregular shearing, and circle work. It also does beveling and splitting of plates. When the work leaves the machine it is finished, there being no buckling nor stretching of material. The manufacturers, the Lennox Throatless Shear Company, Department A A, Marshalltown, Iowa, will be pleased to send literature and further details upon request.

OFFERS HOME COURSES.

When home courses in pattern drafting are offered by a reliable institution, such as The National School of St. Louis, Missouri, there is no reason why all tinsmiths should not be skilled workmen. O. W. Kothe is at the head of this school and has had much practical experience in both the theoretical and practical sides of pattern drafting. These courses include the making of tanks, all warm air heater fittings, barn ventilators, chicken troughs, how to do radiator repairing, together with plumbing, steam and hot water heating. This school was established in 1910 and has

built up a reputation for itself by the good work it has been doing. All those interested should address The National School, O. W. Kothe, principal, St. Louis, Missouri.

FITS GOVERNMENT SPECIFICATIONS.

All "Star" ventilators, made by the Merchant and Evans Company of Philadelphia, Pennsylvania, and Chicago, Illinois, are made of galvanized steel, galvanized iron or sheet copper. However, they can be made to order of other sheet metals in square or rectangular shape instead of the regular cylindrical shape, if required. The Company declares that to exhaust a maximum quantity of air and prevent the entrance of down drafts, snow or rain, the "Star" ventilator by scientific arrangement of baffles or deflectors, upholds or deflects downward wind currents and in this way creates and maintains an upward and outward movement of air through the ventilator. As the wind flows past the ventilator, the current of air coming upward through the ventilator, produces a very rapid operation thereof. The "Star" ventilator is of the highest type of excellence as it corresponds fully in every detail with the specifications of the United States Government. Many thousands have been ordered for Government purposes. These ventilators have been on the market for thirty years and are used in large quantities throughout the country. For further details and booklet of the "Star" ventilator, dealers should address the Merchant and Evans Company, Department 15, Philadelphia, Pennsylvania, or 347 North Sheldon Street, Chicago, Illinois.

"Star" Ventilator, Manufactured by the Merchant and Evans Com- Philadelphia, Pennsylvania.

LET PEOPLE SEE YOUR GOODS.

Don't be afraid to let people see your stock. Goods that are kept hidden away under the counters, in drawers or down the cellar will not turn over nearly as fast as those that are displayed in your store so everyone that comes in will see them.

Keep seasonable lines right up at the front of your store and in your windows. Don't be afraid to keep changing stock around so as to keep the lines people want now where they can see them.

OBITUARY.

Harry M. Shepler.

After a very brief illness, Harry M. Shepler died at his home, 737 Bittersweet Place, Chicago, Illinois, Sunday morning, August 3, 1919. He was widely known in the sheet and tin plate industries through his connection with the sales department of the American Sheet and Tin Plate Company, Pittsburgh, Pennsylvania, for a period of seventeen years. During that time he acquired hosts of friends by virtue of his pleasing personality, his broad sympathies with his fellowmen, and his unswerving honesty in the smallest detail of business relations. For about a year and a half before his untimely demise, he was Western manager for the Autocar Company of Ardmore, Pennsylvania, with headquarters in Chicago. His passing away came as a distinct shock to scores of his intimates and associates because of his being in the very prime of life. He was only forty-seven years of age and was beginning to make a high place for himself in the automobile business.

NOTES AND QUERIES.

Secretary of Illinois Hardware Association.

From J. T. Soenksen, Savanna, Illinois.

Please advise who is the secretary of the Illinois Retail Hardware Association.

Ans.—Leon D. Nish of Elgin, Illinois, is the secretary.

Folding Screw Drivers.

From William Walthers, Georgetown, Colorado.

Can you inform me where I can get a pocket screw driver that folds like an L?

Ans.—Burgess and Norton Manufacturing Company, Geneva, Illinois; and the Crescent Tool Company, Jamestown, New York.

Monarch Heater.

From the B. H. S. Hardware, Dysart, Iowa.

Who makes the Monarch warm air heater?

Ans.—This is made by the Forest City Foundry and Manufacturing Company, Cleveland, Ohio.

Iceless Refrigerators.

From the Dowling-Schultz Hardware Company, Danville, Illinois.

Please let us know who makes an iceless refrigerator.

Ans.—The Fridger Factory, 327 Wells Street; McClellan Refrigerating Machine Company, 570 West Adams Street; and Zander Refrigeration Company, 30 North Michigan Avenue; all of Chicago, Illinois.

Grubbing Machines.

From the Savanna Plumbing, Heating and Hardware Company, Savanna, Illinois.

Kindly advise where we can purchase grubbing machines for pulling stumps.

Ans.—R. S. Caward, Cresco, Iowa; and Smith Manufacturing Company, LaCrosse, Wisconsin.

Christmas Toys.

From W. A. Covell and Son, Waterloo, Iowa.

We would like to know who in Chicago carries a full line of Christmas toys.

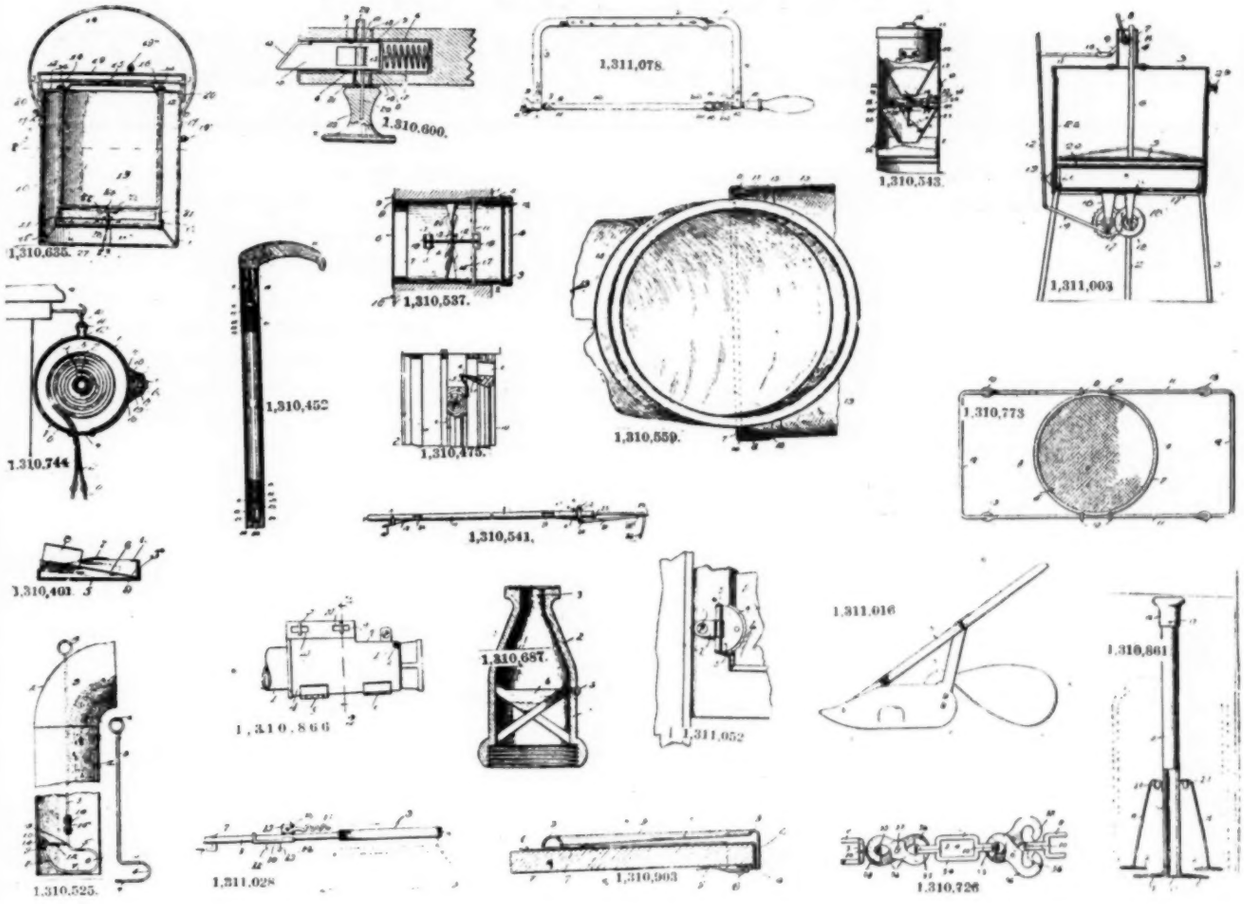
Ans.—These may be purchased from Butler Brothers Company, Randolph Street Bridge, Chicago.

ITEMS.

The Flynn Roofing and Metal Company, Cambridge, Massachusetts, has been incorporated for $5000 by Edmund T. Flynn, Caleb Faden and E. M. Butt.

The Kuperman Brothers Tinware Manufacturing Company, Brooklyn, New York, has been incorporated for $50,000 to manufacture hardware and tinware products. The incorporators are S. Kuperman, N Garil and M. Bernstein.

NEW PATENTS.



1,310,407. Container for Razor Blades. Frederick Howard Auld, Columbus, Ohio.

1,310,452. Combined Fishing Rod and Cane. Stephen Sliwinski, Cressona, Pa. Filed April 5, 1919.

1,310,475. Window Ventilator. Joseph Gruber, Milwaukee, Wis. Filed April 9, 1919.

1,310,525. Stovepipe Cleaner. Lee Frasier, Frederick, Okla. Filed Jan. 11, 1918.

1,310,537. Ventilator. John Merkel, Robinson, N. D. Filed July 18, 1918.

1,310,541. Rake Cleaner. George F. Patterson, Edgerton, Minn. Filed Feb. 10, 1919.

1,310,543. Flour Sifter. Gabor Racy, Bridgeport, Conn. Filed Sept. 10, 1918.

1,310,559. Hose Coupling. Norman Blythe Braly, Butte, Mont. Filed July 5, 1918.

1,310,600. Door Latch. Harold Blye, Grand Rapids, Mich., assignor to National Brass Co., Grand Rapids, Mich., a Corporation of Michigan. Filed Nov. 13, 1918.

1,310,635. Fireless Cooking Utensil. Parlee H. Russell, Van Buren, Ohio. Filed July 7, 1915. Renewed May 13, 1919.

1,310,687. Spray Nozzle. Harry D. Binks, River Forest, Ill. Filed July 12, 1918.

1,310,726. Power Transmitting Chain. Charles O. Wyman, Anoka, Minn. Filed June 12, 1915.

1,310,744. Sanitary Holder for Razor Strops. Ralph R. Edwards, Helper, Utah. Filed April 8, 1918.

1,310,773. Strainer. Walter Bruce Wills, Baltimore, Md. Filed Dec. 6, 1918.

1,310,861. Cream-Whip. Benjamin F. Fowler, Minneapolis, Minn. Filed Dec. 18, 1918.

1,310,866. Hose Attachment. Thomas Mason Hughs, San Jose, Calif. Filed July 29, 1918.

1,310,903. Sanitary Table Utensil. Anne Witte Butterfield. Columbus, Ohio. Filed Oct. 23, 1918.

1,311,003. Operating Means for Washing Machines. Fred Michalicek, Portland, Ore. Filed May 3, 1917.

1,311,016. Grass-Divider. George M. Short, Litchfield, Calif. Filed April 1, 1919.

1,311,028. Can Opener. Harry W. Wiley, Black Lick, Pa. Filed April 11, 1917.

1,311,052. Window Lock. Oscar L. Danforth, San Diego, Calif., assigner to Matilda Danforth, San Diego, Calif. Filed May 13, 1919.

1,311,078. Hacksaw. George Kucera, Grand Island, Neb. Filed June 6, 1918.

DEFINES ORIGIN OF WORD DRUMMER.

In ancient times, itinerant merchants when they entered a town, beat a drum to attract attention to their wares. That's how they became known as drummers—and that name, even to this day, clings to the class of salesmen who go into a town and find it necessary to make a big verbal noise to gain attention.

Not so very long ago the "ammunition" of many a drummer was a collection of puns which would be related to such merchants as would listen to them, in the hope of attracting their attention and good will and to gain an opening for the presentation of facts regarding the merchandise that was offered.

I think it rather fine, this necessity for the tense bracing of the will before anything worth doing can be done. I rather like it myself. I feel it is to be the chief thing that differentiates me from the cat by the fire.—Arnold Bennett.

WEEKLY REPORT OF TRADE AND THE MARKETS

REPORTS FROM PRODUCERS OF STEEL SHOW INCREASED DEMANDS.

From practically all the steel producing centers comes news of increasing prosperity. There is heavy demand for structural steel and plates, shapes and bars. As for wire prices and supplies, consumers who have covered their requirements are lucky, say the agents for wire mills.

One of the large wire interests has been advising its old customers to cover requirements as fast as possible and this company has refused to accept business from new customers because of the rush of orders from its old trade.

Plain and barbed wire are strong in the market, and it is hinted that the leading interests may follow the example of some of the small concerns in marking prices higher on these descriptions.

The improvement in the market has been gradual, so gradual that when the quarterly report of the leading interest was issued earlier in the week, there was surprise over the excellent showing made. Several independent companies had issued their reports for the second quarter and in many cases the reports had shown reduced earnings, but in the case of the leading interest the showing was different. In fact, an increase of $817,917 over the first quarter showing was made where the trade as a whole was prepared for a decrease. It was explained after the report had been issued that the second quarterly report was more typical of what the trade might expect for the year was than the first quarterly report, inasmuch as the company had considerable business on its books for the first three months of the year.

The pig iron market naturally is falling in line behind the steel industry in the general activity and buying is of sufficient volume to keep the working near to capacity. Several idle plants are to be blown in to get a share of this business, but it will be some time before the plants can be brought around into shape to turn out any sizeable supplies, and the prediction in the pig iron market is for heavy business for a long time.

Some of the larger steel companies report that export business shows signs of falling off. This is due for the most part to the situation in the exchange market, as dollar exchange has advanced to such a point abroad that foreigners do not buy here unless forced to do so. It is believed that an advance in sterling or a decline in dollar exchange would bring a revival of the export trade.

STEEL.

Makers of high speed steel, especially the larger concerns, are losing on the present market, inasmuch as the leading concerns had contracted for supplies of tungsten before the armistice at higher prices than those prevailing now and have to enter steel made from this high class stock in competition with supplies made from cheaper tungsten. It is suggested that at the present price of about $1.50 to $1.60 producers cannot compete with the English manufacturers, who are quoting from $1.10 to $1.30. Manufacturers are pocketing this loss as well as they can and are busy making plans for future trade, especially in export.

COPPER.

Domestic demand for copper is diminishing to some extent, but the market continues on a steady basis. It is noteworthy that during July there was a full advance of 4½ cents to 5 cents per pound on the various grades and kinds of copper, maximum prices being established about July 24. Since that time prices in the open market have receded ½ cent to 1 cent per pound. From the lowest prices touched in April, the full advance realized by the largest producers was 9 cents to 10 cents per pound, while the net advance in the open market over the same period has ranged from 8 cents to 9 cents per pound.

Although sales made in the last two weeks were relatively light, it is estimated that total sales made in July, on both domestic and foreign account, were from 175,000,000 to 200,000,000 pounds, there having been very heavy business during the first half of the month.

It has been pointed out in these reports from time to time that sales of copper during the first quarter of this year were a little less than 300,000,000 pounds, and that in second quarter total sales, exclusive of Government stock liquidation, were in excess of 410,000,000 pounds. Thus, including sales of Government supplies, a little more than 500,000,000 pounds were placed under contract in second quarter.

Total sales during the first half of the year were approximately 800,000,000 pounds, of which 100,000,000 pounds were made on behalf of the Government. In the first seven months of the year, total sales, including Government stocks, were not far from 1,000,000,000 pounds, but, of course, this amount of copper has not all passed into consumptive channels, and therefore surplus stocks continue to be larger than they were on January 1, 1919, but the probability is that in the next few months deliveries into domestic and foreign consumptive channels will reduce producers' stocks of refined copper considerably.

No further change has taken place in the price of sheet copper in the Chicago market, last week's figures of 33½ cents per pound being still in effect.

TIN.

The market for tin is still exceedingly quiet as deal-

ings are within the small radius of urgent requirements as far as spot metal is concerned. The tendency earlier in the week was slightly easier and it was evident that spot Straits was obtainable at 70 cents. Shipments for the last three months in the year are held at 55 cents, but little business was transacted. Ninety-nine per cent tin was offered at 65½ cents in the spot position, while future deliveries were held at 55¼@55¾ cents. The London cables after the holidays came £1 higher in Standard spot, and the Eastern price c.i.f. London was quoted at £271, which is £1 15s. above the previous price.

LEAD.

The St. Louis lead market continues quiet. Second hands are reported as shading the official price of 5.75 cents to the extent of $2 per ton.

SOLDER.

Prices of solder remain the same as those of last week. Chicago quotations are as follows: Warranted, 50-50, per pound, 39.5 cents; Commercial, 45-55, per pound, 36.2 cents; Plumbers', per pound, 32.9 cents.

ZINC.

The zinc market shows an advancing tendency. In Chicago, sheet zinc has increased from 12 cents to 13 cents per pound in cask lots and from 12¼@12½ cents to 13¼@13½ cents in less than cask lots.

It may be stated with certainty that the producers' position is a strong one. They have but little metal on hand, and are well booked up for some weeks to come—and their costs are prohibitive to cutting prices. As to the outside sellers, their holdings are more difficult to estimate, but a great deal of the trading during the advance was between operators and a large proportion of it has been "ringed," and this does not represent metal on the market for sale.

The domestic demand for some time has been of the hand-to-mouth character, and it is certain that the galvanizers as a rule have not contracted far ahead of their wants. Certainly their outlook for business is strongly improving, and business in this country unless upset by widespread strikes or disorders should be good. The country is prosperous, and as to values of all commodities it must always be borne in mind that we are on an entirely different basis from pre-war times.

SHEETS.

According to reports from Pittsburgh, last month was one of the most notable in the annals of the industry, with specifications largely in excess of production. While some of the independent sheet mills are displaying a tendency to advance black sheets $2 a ton and galvanized sheets $4 the balance of probability seems to be that the advance will not become general among the independents. The leading interest is on record as being opposed to price advances and it is known positively that some of the independents have a settled policy of avoiding price advances unless made by the leading interest. A curious feature of the situation is that if concessions from the regular prices have disappeared they have only disappeared within the past few days. There are very recent cases of price cutting. No. 16 galvanized sheets are still selling at $6.22 per 100 pounds in the Chicago market. Corresponding prices remain in force for other gages.

TIN PLATE.

A considerable amount of unfilled tonnage remains on the books of the tin plate manufacturers. Plants are running slightly more than 90 per cent of capacity. No important cutting of prices is noted of late, principally no doubt because there is no warrant for it in the present condition of the market. In Chicago, first quality bright tin plates IC 14x20 are quoted at $13.20 per box of 112 sheets and other gages and sizes at corresponding prices.

OLD METALS.

Wholesale quotations in the Chicago district which may be considered nominal are as follows: Old steel axles, $29.00 to $30.00; old iron axles, $30.00 to $31.00; steel springs, $23.00 to $24.00; No. 1 wrought iron, $21.00 to $22.00; No. 1 cast, $24.00 to $25.00, all net tons. Prices for non-ferrous metals are as follows, per pound: Light copper, 15¾ cents; light brass, 10 cents; lead, 4¼ cents; zinc, 4¼ cents; cast aluminum, 22½ cents.

PIG IRON.

Pig iron continues strong and active in all markets and the demand from the steel makers is very heavy for this time of the year.. One report from the Middle West is significant, inasmuch as stock for next year delivery is reported sold at an advance of $2 over prices quoted for last quarter 1919 delivery and a strong demand has also developed for export which is bound to have a strong influence on the future course of the market.

So far as can be learned the largest part of the export business has not gone beyond the inquiry stage, but it is expected that a good volume of business will result in the near future. At the present time the exchange situation is discouraging new export business, but an early improvement is anticipated in this situation.

Apparently the pig iron market is growing stronger and prices are strengthening each day, according to the market report of the Matthew Addy Company, Cincinnati, Ohio. Things began to wake up in June; July came along with a remarkably fine tonnage, and indications are that August will be even a bigger month than July. The fact that the Northern furnaces have taken on so much business for the balance of this year and have so nearly filled up their order books is having its effect on the whole situation. Some weeks back when no iron sales of appreciable quantity had been made for a long time Northern furnaces were accumulating iron and piling it on the yard merely to keep their organizations together. Now things have changed completely. Some of the Northern furnaces have actually sold all of the iron that they expect to make during the remainder of this year.

Current Hardware and Metal Prices.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS.

PIG IRON.

Basic	$25 50
Northern Fdy., No. 2	26 75
Southern Fdy., No. 2	30 00
Lake Sup. Charcoal	31 45
Malleable	27 25

FIRST QUALITY BRIGHT TIN PLATES.

			Per box
IC	14x20	112 sheets	$13 20
IX	14x20		14 63
IXX	14x20		16 30
IXXX	14x20		17 50
IXXXX	14x20		18 70
IC	20x28		26 40
IX	20x28		29 25
IXX	20x28		32 60
IXXX	20x28		35 00
IXXXX	20x28		37 40

COKE PLATES.

Cokes, 180 lbs		20x28	$16 00
Cokes, 200 lbs		20x28	16 20
Cokes, 214 lbs	IC	20x28	16 60
Cokes, 270 lbs	IX	20x28	18 50

BLUE ANNEALED SHEETS.

No. 10	per 100 lbs.	$4 57
No. 12	per 100 lbs.	4 62
No. 14	per 100 lbs.	4 67
No. 16	per 100 lbs.	4 77

ONE PASS COLD ROLLED BLACK.

No. 18-20	per 100 lbs.	$5 42
No. 22-24	per 100 lbs.	5 47
No. 26	per 100 lbs.	5 52
No. 27	per 100 lbs.	5 57
No. 28	per 100 lbs.	5 62
No. 29	per 100 lbs.	5 67

GALVANIZED.

No. 16	per 100 lbs.	$6 22
No. 18-20	per 100 lbs.	6 37
No. 22-24	per 100 lbs.	6 52
No. 26	per 100 lbs.	6 67
No. 27	per 100 lbs.	6 82
No. 28	per 100 lbs.	6 97
No. 30	per 100 lbs.	7 47

WELLSVILLE POLISHED STEEL.

No. 18-20	per 100 lbs.	$7 10
No. 22-24	per 100 lbs.	7 20
No. 26	per 100 lbs.	7 30
No. 27	per 100 lbs.	7 40
No. 28	per 100 lbs.	7 50

KEYSTONE HAMMERED POLISHED STEEL.

28-26	per 100 lbs.	$9 85
24-22	per 100 lbs.	9 35

BAR SOLDER.

Warranted, 50-50	per lb.	39.50
Commercial, 45-55	"	36.20
Plumbers'	"	32.90

ZINC.

In slabs 8¼c

SHEET ZINC.

Cask lots 13c
Less than cask lots ..... 13½ to 13¼c

COPPER.

Copper Sheet, base 33½c

LEAD.

American Pig	$6 25
Bar	6 75

Sheet.

Pull coils	per 100 lbs.	$8 75
Cut coils	per 100 lbs.	9 00

TIN.

Pig tin 76¼c
Bar tin 78¼c

HARDWARE.

ADZES.

Carpenters'.
Plumbs ..... Net

Coopers'.
Barton's ..... Net
White's ..... Net

Railroad.
Plumbs ..... Net

AMMUNITION.

Peters Cartridges.
Semi-Smokeless ..... Less 10-7½%
Smokeless ..... Less 10-7½%

Shells, Loaded, Peters.
Loaded with Black Powder. Less 15%
Loaded with Smokeless Powder, medium grades ..... Less 15%
Loaded with Smokeless Powder, high grade ..... Less 15%

Winchester.
Smokeless Repeater Grade .. 10&5%
Smokeless Leader Grade .... 10&5%
Black Powder ..... 10&5%

U. M. C.
Nitro Club ..... 10&5%
Arrow ..... 10&5%
New Club ..... 10&5%

Gun Wads—per 1000.

Winchester 7-8	gauge	$2 25
" 9-10	gauge	1 94
" 11-28	gauge	1 63

Powder.

		Each
DuPont's Sporting,	kegs	$11 25
" "	½ kegs	5 90
" "	¼ kegs	3 10
DuPont's Canisters,	1-lb.	56
" "	½-lb.	32
" "	¼ lb.	22
" Smokeless,	drums	43 50
" "	kegs	22 00
" "	½ kegs	11 25
" "	¼-kegs	5 75
" "	canisters	1 00
L. & R. Orange, Extra Sporting	kegs	11 25
L. & R. Orange, Extra Sporting	½-kegs	5 90
L. & R. Orange, Extra Sporting	¼-kegs	3 10
L. & R. Orange, Extra Sporting	1 lb. canisters	56
L. & R. Orange, Extra Sporting	½ lb. canisters	32
L. & R. Orange, Extra Sporting	¼-lb. canisters	22
Hercules "E.C." and "Infallible"	50 can drums	43 50
Hercules "E. C."	kegs	22 50
Hercules "E. C."	½-kegs	11 25
Hercules "Infallible,"	25 can drums	22 00
Hercules "Infallible,"	10 can drums	9 00
Hercules "E. C."	¼-kegs	5 75
Hercules "E.C." and "Infallible"	canisters, per gro.	1 00
Hercules W. A. .30 Cal. Rifle,	canisters	1 25
Hercules Lightning Rifle,	canisters	1 25
Hercules Sharpshooter Rifle,	canisters	1 25
Hercules Unique Rifle,	canisters	1 50
Hercules Bullseye Revolver,	canisters	1 00

ANVILS.

Trenton, 70 to 80 lbs. ..... 9¼c per lb.
Trenton, 81 to 150 lbs. ..... 9¼c per lb.

ASBESTOS.

Board and Paper, up to 1/16" 17c per lb.
Thicker ..... 18c per lb.

Broad.

Plumbs, West, Pat.		List
" Can. Pat.		$69 00
" Firemen's (handled),	per doz.	21 00

Single Bitted (without handles).

	Prices
Warren Silver Steel	on application
Warren Blue Finished	"
Matchless Red Pole	$11 50

Double Bitted (without handles).

Warren's Natl. Blue, 3½ to 4½ lb. ..... Prices on application
The above prices on axes of 3 to 4 lbs. are the base prices.

BAGS, PAPER NAIL.

Pounds	10	16	20	25
Per 1,000	$5 00	6 50	7 50	9 00

BALANCES, SPRING.

Pelouze 20%

BARS, CROW.

Pinch or Wedge Point, per cwt. ... $8 50

BASKETS.

Clothes.

Small Willow	per doz.	15 00
Medium Willow	"	17 00
Large Willow	"	20 00

Galvanized Steel.	½ bu.	1 bu.	1½ bu.
Per doz	$11 50	$17 00	$22 00

AUGERS

Boring Machine 60%
Irwin's 25%
Carpenter's Nut 50%

Hollow.

Bonney's	per doz.		30 00
Stearns, No. 0	"		43 25
" No. 1	"		43 25
" No. 2	"		43 25
" No. 3	"		42 00
" No. 4	"		9 00
" No. 30	"		45 00
" No. 33	"		45 00
" No. 44	"		17 00
" No. 50	"		48 00
" No. 55	"		45 00
" No. 60	"		39 00

Post Hole.
Iwan's Post Hole and Well 25%
Vaughan's, 4 to 9-in. .. per doz. $13 00

Ship.
Ford's, with or without screw. Net list

AWLS.

Brad.

No. 3 Handled	per doz.	$0 65
No. 1050 Handled	"	1 40
Shouldered, assorted 1 to 4,	per gro.	4 00
Patent asst'd, 1 to 4	"	85

Harness.

Common	"	1 05
Patent	"	1 00

Peg.

Shouldered	"	1 60
Patented	"	75

Scratch.

No. IS, socket hand'l'd.	per doz.	2 50
No. 344 Goodell-Pratt, List, less		35-40%
No. 7 Stanley	"	2 25

AXES.

Boys' Handled.
Niagara 12 50

BEATERS.

Carpet.

	Per doz.
No. 7 Tinned Spring Wire	$1 10
No. 8 Spring Wire coppered	1 50
No. 9 Preston	1 75

Egg.

			Per doz.
No. 50	Imp.	Dover	$1 10
No. 102	"	" tinned	1 35
No. 150	"	" hotel	2 10
No. 10	Heavy	hotel tinned	2 10
No. 13	"	" "	3 30
No. 15	"	" "	3 60
No. 18	"	" "	4 50

Hand.

	8	9	10	12
Per doz.	$11 50	13 00	14 75	18 00

Moulders'.
12-inch ..... Per doz. 20 00

BELLS.

Call.
3-inch Nickeled Rotary Bell, Bronzed base ..... per doz. $5 50

Cow.
Kentucky 30%

Door. Per doz.
New Departure Automatic ... $7 50
Rotary.
3 -in. Old Copper Bell 6 00
3 -in. Old Copper Bell, fancy. 8 00
3 -in. Nickeled Steel Bell 6 00
3½-in. Nickeled Steel Bell 6 50

Hand.
Hand Bells, polished 15%
White Metal 15%
Nickel Plated 10%
Swiss 15%
Silver Chime 10%

Miscellaneous.
Church and School, steel alloys ... 30%

Farm, lbs.	40	50	75	100
Each	$3 00	3 75	5 50	7 25

BEVELS, TEE.

Stanley's rosewood handle, new list ..... Nets
Stanley's iron handle ..... Nets

BINDING CLOTH.

Zinced 55%
Brass 40%
Brass, plated 60%

BITS.

Auger.
Jennings Pattern 20%
Ford Car ..... List plus 5%
Ford's Ship ..... " " "
Irwin 35%
Russell Jennings 15%
Clark's Expansive 33⅓%
Steer's " Small list, $22 00 ..... 5%
" " Large " $26 00 ..... 5%
Irwin Car 35%
Ford's Ship Auger pattern Car ..... List plus 5%

Center 10%

Countersink.

No. 18 Wheeler's	....	per doz.	$2 25
No. 20	"	.... "	3 00
American	Snailhead	"	1 75
"	Rose	"	2 00
"	Flat	"	1 40
Mahew's	Flat	"	1 60
"	Snail	"	1 90

Dowel.
Russell Jennings 15%

Gimlet.
Standard Double Cut. Doz. $1 10—$1 60
Countersink ..... Doz. 1 80

Reamer.

Standard Square	Doz.	2 50
American Octagon	"	2 50

Screw Driver.

No. 1 Common	"	1 40
No. 26 Stanley		1 75